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EDITORIAL

The Indus Civilization since its first recognition in 1924 aroused the interest and speculation of the archaeological world. Although the researches for more than four decades have brought to light the wider extension of the civilization, the basic problem of its origin and development still continues to be shrouded in mystery. The excavations at Kot Diji a village in Khairpur District 25 miles east of Mohenjodaro have thrown considerable light on this problem. These excavations were reported briefly in the last issue. A detailed report on these excavations appears in the present volume. The Excavations have established that Kot Diji culture not only preceded the Harappa culture but also contributed towards its development. The radio-carbon (or C 14) analysis of a number of samples from this site embodied in the report is the first application of this well known method to remains relating to the Indus Valley Civilization.

In Baluchistan in spite of several exploratory tours of Sir Aurel Stein and others, large areas are still untouched, and those of the sites which have been recorded do not fit into a chronological framework. In order to correlate these heterogeneous cultures and arrange them in a chronological sequence several planned efforts have been made. In 1948 and again in 1957 a British expedition led by Miss B. deCardi laid trenches in Kalat region. A short account of these exploratory excavations had appeared in the last issue. The present issue includes detailed article by Miss B. deCardi on these excavations.

Systematic explorations as a preliminary to archaeological excavations constitute a regular feature of the Departmental activity. Explorations conducted by the Superintendent of Explorations and his assistants till 1960 were reported in the last issue of the journal. The present volume includes the explorations carried out during 1961-64.

F. A. KHAN

EXPLORATION IN WEST PAKISTAN 1961-64

DERA GHAZI KHAN DISTRICT

I. THER DALLU RAI (90°.38' NORTH AND 70°.30' EAST)

The site lies about 2½ miles south-west of Tehsil Jampur in the district of Dera Ghazi Khan. It actually consists of two mounds, roughly 100 to 150 feet apart. The larger one measuring 1460 x 800 x 15 feet marks the site of the city and the smaller about 380 feet North-South and 950 feet East-West has been identified as a fort. Both the mounds have been dug by the local farmers and have thus exposed the plan of the houses and streets but the mud-brick walls have escaped complete destruction. Some of the walls with traces of mud plaster stand as high as 12 feet. At certain places complete plan of the rooms is traceable which varies from 5 x 5 feet to 15 x 10 feet. The study of the deep trenches dug by the farmers has revealed two building periods of the city.

The smaller mound, rectangular in shape, in the north of the city site is 15-20 feet high above the cultivated field. The massive mud-brick walls 10-15 feet wide around it undoubtedly mark the site a kind of defensive fort. These walls have been further strengthened by bastions projecting at intervals, of which at least 22 can easily be located. The corner bastions are higher and larger. A break, flanked by bastions, almost in the middle of the defence wall of the fort may indicate a gateway.

The surface finds from the Dallu Rai include a wide range of pottery, plain, painted, stamped, incised and sherds with applique decoration.

In plain types sherds vary from thin texture bowls to thick and heavy rimmed jars. The bowls mostly having grooves on both sides are flaring outside. In this plain type sherds with incised circles, leaf pattern, curved lines, six sided star incised in double lines are prominent.

The painted designs consist of loops hanging below the horizontals, wavy lines between horizontal parallel lines, ladder motifs, chequers and leaf motifs, cross hatched squares arranged point to point.

A few pottery moulds with flower and leaf motifs have also been recovered. Other finds include sling balls, dabbers, oil lamps, spoon handles, terracotta wheels and animal figurines.

The specimens of bottle-necked sprinkles with curved flange and conical knob at the top are quite similar in all respects to the types recovered from the Scytho-Parthian levels of Banbhore, Taxila and Pitalkora (India) and they may be dated to 1st century B.C. to 2nd century A.C.

The moulding representation of acanthus foliage, lotus petals and sun-flowers carved in the most naturalistic style and burnt bricks decorated with flower and geometrical designs are all the characteristic representation of Buddhist culture. Moreover, a terracotta object of 6½ inches high having circular umbrellas seems to represent a miniature stupa. A fragment of a plaque of red sand depicting a lady with high head dress and wearing ear-rings and a sculpture in white lime stone appears to be of a 'Bodhisattva' wearing 'Dhoti' fastened with a girdle and bracelets on the left hand holding a 'Kamandali'—all these represent the Buddhist culture.

So, on the basis of study of these finds it is vividly clear that this site was occupied by the Buddhists in the Scytho-Parthian period dating back to the 1st century B.C. to 2nd century A.C.

II. BAREERA MOUNDS

There are actually two Bareeras about 3 miles apart near Fazilpur and Sikhaniwala in Tehsil Rajanpur of Dera Ghazi Khan district:

- i) Bareera I about 280 feet across and 12 feet high lies 3 miles in the North-East of Fazilpur.
- ii) Bareera II lies about half a mile north of Sikhaniwala measures 221 feet across and 8 feet high above the general level of the ground.

III. CHAH GIRAZ WALA

It lies about 2 miles west of Basti Baig which is 24 miles on Dera Ghazi Khan—Taunsa road. Actual site is almost flat which measures 240 feet North-South and 200 feet East-West.

IV. THER DOOGAR

It is situated at about half a mile west of Chah Giraz Wala, circular in shape and over 100 feet in diameter. The mound of Ther Doogar rises up to 9 feet high.

The pottery finds from four other sites consist of mostly unpainted plain ware and include vessels of utilitarian type. The few painted specimens show simple geometric designs with black paint on red-slip. All the forms and designs from these sites are comparable with the extensive site of Ther Dallu Rai, already discussed and thus it appears to be contemporary in part with it.

QUETTA - PISHIN DISTRICT

Bershor Valley:—Two more new sites near Khairabad and Manzakai were explored by an officer of the Department of Archaeology in the Bershor Valley.

I. THE SITE NEAR KHAIRABAD (67°.4' EAST, 30°.42' NORTH)

The mound lies 600 yards East of Raisi-Ghundai and about 1½ miles south of Manzakai and north of village Khairabad. The main site roughly rectangular in shape and it is enclosed in small ridges on three sides having an opening in the north.

The pottery finds consist of thick and heavy pieces of large pots having rope and chain motifs in relief, flat dishes, small bowls, well fired thin pieces of ribbed wares and small vases of coarse fabric. The painted designs include,

- 1) Group of zigzag lines within parallel bands in red.
- 2) Flower motif hanging below a wavy line painted with light brown colour on thin creamish slip.
- 3) Thick bodied specimens show stamped designs of leaves. Cross hatching, compartment circles with dots and trees arranged in parallel zones.

All the pottery pieces of this site do not seem to have the feel of pre-historic pottery and therefore may indicate an occupation which existed in historical times.

II. THE MOUND OF DAB KHANZAI. (67°5' EAST. 30°43')

The site lies about half a mile North-East of Manzakai and 100 yards West of a small village Dab-Khanzai. The mound, roughly three hundred feet from East-West, rises ten to fifteen feet high above the surrounding plain.

The potsherds collected from the surface are of thick body and coarse fabric. Painted specimens, few in number, show simple horizontal lines in black or light brown colour.

Besides the exploration of these two sites, three mounds namely Spina-Ghundai, Tor-Ghundai and Riasa-Ghundai were already explored by Sir Aurel Stein and Fairervis. They visited there to collect the surface finds for the purpose of study and examination.

NAWAB SHAH DISTRICT

I. BHIRO BHAM

Bhiro Bham situated in the district of Nawabshah lies between Daur and Bandhi railway stations and about 3 miles south of Bandhi, between the railway line and Amurji branch canal. The mound measures 1000 feet North-South and 950 feet East-West with a maximum height of 12 feet above the general level of the surrounding area. The test trenches at the site have revealed more significant evidences of Islamic Culture. The limited work has established that:

- 1) the site has brick fortification wall running around with semi-circular bastions at intervals.
- 2) It remained under prolonged occupation to witness two definite building periods before it was finally destroyed by fire.

A test trench was dug between 18 feet apart two bastions in the middle of the eastern wall in the hope to get the city gateway. It was carried down to the natural soil. As was expected it revealed an impressive gateway with its two construction periods. The earliest gateway when first built must have been 12'.3" which was reduced to 5'.3" by building two arms projecting inside the gateway, in the last period. This last building phase of the Gateway is associated with signs of intense burning.

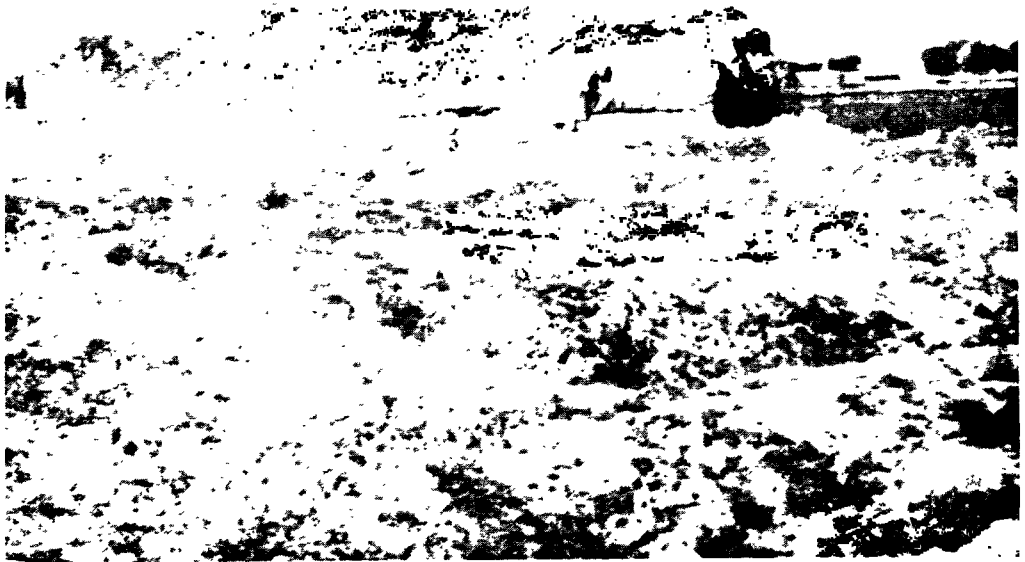
Another trench laid inside the Gateway confirmed the presence of two definite periods.



(a). Bhiri Bham. General view of the Eastern Gateway and the two flanking bastions



(b). Bhiri Bham. General view of the baked brick fortifications on the West



(a). Tur Ghundai near Manzakai. General view



(b). Ther Doogar. General view of the mound



(a). Mosque near Dandhi. View from North-East



(b). Ther Dallu Rai. A section of the mound showing three structural levels



(a). Ther Dallu Rai. General view: the high mound in the foreground represents the fort



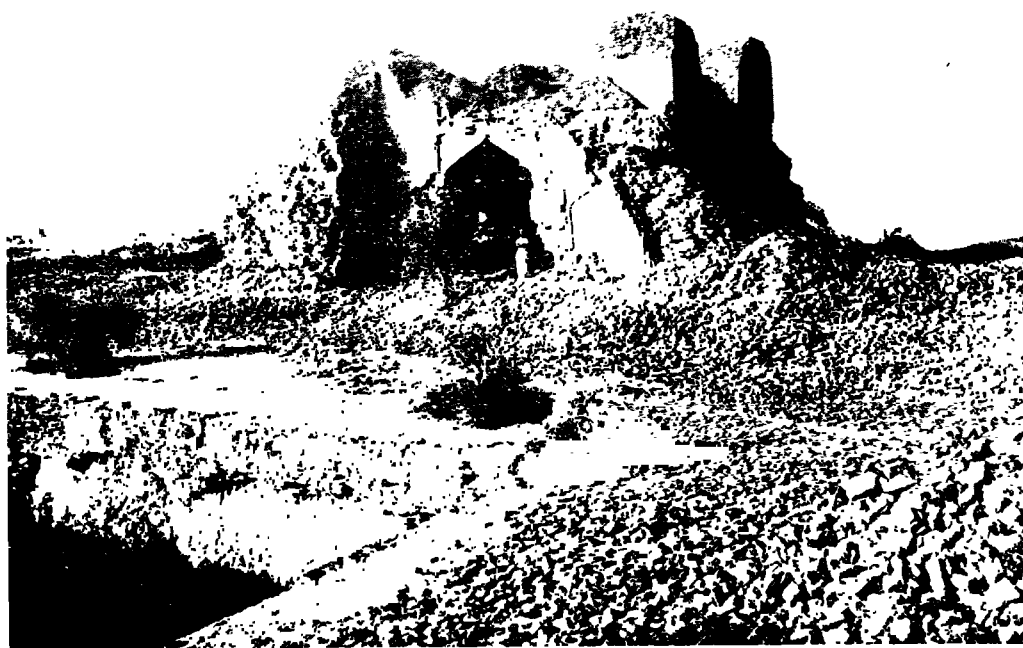
(b). Bhira Bham mound. View from South-East



(c). Barera-I. D.G. Khan. General view



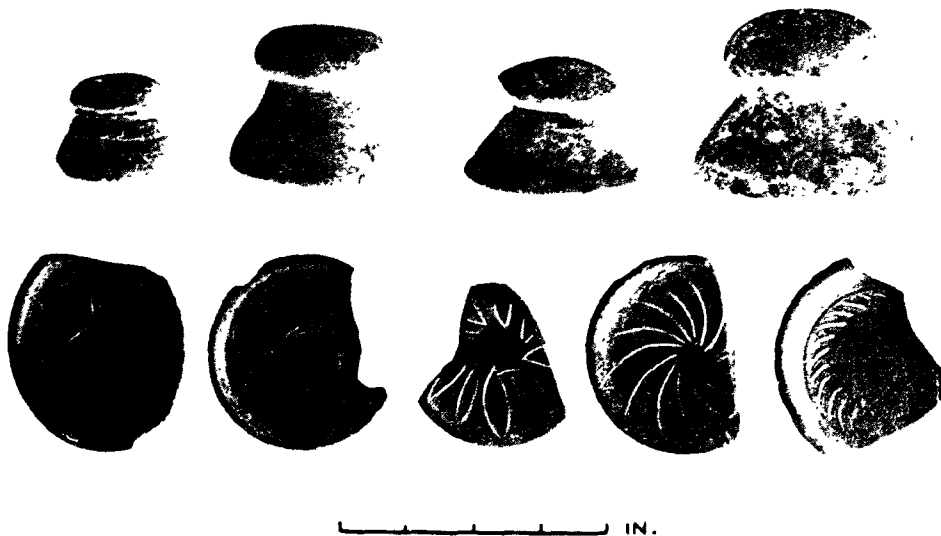
(a). The ruins of Aror near Rohri



(b). The Mosque in Kalan Kot Fort, Thatta



(a). Ther Dallu Rai. Pottery moulds and mouldings



(b). Ther Dallu Rai. Dabbers and incised pottery



Painted pottery from Spina Ghundai and Raisa Ghundai



Bhiri Bham. Painted pottery

In order to check up whether two building periods and the presence of intense burning may not be a localized affair, a third trench restricted to the Eastern Gateway was marked on the opposite side i.e. along the Western fortification wall. This trench further confirmed the results of two building periods clearly marked with difference in masonry work and a burnt layer of the last period.

Limited clearance on the top of the fortification wall revealed that it was 6 feet thick. Both the inner and outer faces were built of burnt bricks. The space in between them was filled with earth. In solidity and massiveness, this fortification at Bhiri Bham can be compared with the defence system of Banbhore.

The pottery is well fired, of medium thickness and light red in colour. The form includes bowls, knobbed lids, water pitchers and small vases. Some incised grey pieces also occur. The painting is mostly done in black and red colour with thick brush. The designs are consisted of cross hatched squares in black or red, dots, vertical lines and bird painted over cream slip.

Few glass pieces, copper coins, many shell bangles, one alkaline glazed handle, few spouts and one terracotta bull figurine are among the small finds from Bhiri Bham.

In pottery and other finds no marked change occurred in the early and late periods and these are all comparable with the intermediate Muslim level of Banbhore, dated between 9th and 11th century A.C.

JACOBABAD DISTRICT

Therri Karam Shah and Therri Bahadur, about half a mile apart, were explored by an officer of the Department of Archaeology on the report of the local authorities.

I. THERRI KARAM SHAH

Therri Karam Shah is situated about half a mile North-East of Jhatpat railway station and roughly three furlongs east of Quetta-Jacobabad highway. The mound is roughly circular in shape, measuring 570 feet North-South and 530 feet East-West with a maximum height of about 10 feet in the North-Eastern part of the mound. The North-Western part of the site is covered up with modern graves. From the northern limits of the mound, 5 small circular shaped gold ornaments and several unworked silver bars were recovered.

II. THERRI BAHADUR SHAH

About a mile due east of Jhatpat railway station lies the ancient site of Therri Bahadur Shah, measuring 230 yards North-South and 200 yards East-West and consists of three small low mounds, very close to one another. Mud brick structure was observed at number of places on the mound.

The pottery and other small finds from both these mounds are quite similar in all respects and mainly comprise of plain red sherds, well fired and some with smooth surface. The recognizable form includes heavy and thick jars and ringed bases of bowls. Painted specimens of sherds which are few in number display geometric designs, cross-hatched triangles, oblique lines or simple horizontal lines painted with black or in red colour. A few pieces show stamped floral designs. A chert core, a fragment of an offering stand and a few pieces of perforated pottery, all these indicate of its being an Harappan cultural site.

THATTA DISTRICT

I. DANDHI

A large mound is situated just on the western side of the road to Mirpur Patharo at mile-stone 11/6. An unmetalled road runs towards west by the Southern foot of the mound.

The site is 340 yards in length and little less in width and shows an average height of 30 feet. It has been very much disturbed by the local inhabitants whose houses occupy its top. Most of the Northern part of the site is now covered with trees.

Pottery from Dandhi:—Among the surface collection the plain pottery shows dull red colour. It is mostly well burnt but some under-fired pieces are also present. The forms consist of large dishes, pans and handled open-mouthed jars. On some pieces painting is done with black or brown over a thin red slip. The painted pottery is well burnt without exception and the designs include plants, wavy lines and cross-hatched oval shaped motifs. Bowls and dishes showing incised designs and coated with blue glaze are also present. A large flat-bottomed bowl has a thick coat of white or opaque glaze on it. Similar glazed wares occur in the 14-15th century A.C. levels at Tulamba; in the pre-Sikh levels at Lahore Fort; and also they were collected from Multan Fort in 1959; and at the late Islamic site at Agore situated in the mouth of the Hingol river in Las Bela. Three iron nails were among the small finds.

Mosque near Dandhi.—To the south of Dandhi mound and across the 'kutchra' road, the domes of a ruined mosque attract the attention of passersby from a considerable distance.

The mosque being rectangular in plan with an open courtyard in front is built of square sized bricks. The size of the bricks is $8\frac{3}{4}$ " x $8\frac{3}{4}$ " x $1\frac{1}{2}$ ". Mud mortar is used in the core of the wall but the outer courses are set in lime. Patches of lime plaster still exist on the walls which are fast decaying. The boundary wall of the courtyard has collapsed into heaps of bricks. Access to the inner prayer chamber is provided through an arched opening, 4 feet 3 inches wide, and built within a large equilateral arch in the facade. The flatly laid bricks of the central arch present a pleasing contrast against the horizontal brick courses of the wall. The walls of the prayer chamber are 2 feet and 8 inch wide.

Internally, the prayer chamber measures 24 feet and 8 inches long and 9 feet 3 inches wide. The mehrab in the 'qibla' wall is flanked by two small niches built into the wall and each measures 2 feet 9 inches wide, $1\frac{1}{2}$ feet deep and 4 feet 9 inches high. The mehrab shows a beautiful squinch built under the arch.

The prayer chamber is crowned with large double-dome, flanked by two small domes. The inner dome in the middle has collapsed but the outer one which is raised on octagonal base is still intact. Externally, the domes show lime plaster.

Unfortunately, there was no inscription in the mosque. Stylistically, it may be placed in the Mughal period since the technique of double-dome, though essentially Persian in origin (e.g. Ghor-e-Amir in Samarkand), was adopted and freely employed in the Mughal buildings. Several tombs of the Mughal period in Lahore bear testimony to this fact.

The mosque is a good architectural specimen of the Mughal period. It might have remained in use during the occupation period at Dandhi.

II. SHAH KAPUR

About 9 miles South South-East of Mirpur Pathoro, the remains of an extensive settlement are extant in the shape of numerous mounds which spread over an area of two miles long and about a mile in width. Burnt brick walls are visible on the surface of the several mounds so clearly that the whole plan of the ruined building can be traced out.

Burnt brick walls, surviving 3 to 5 feet high along with lime plastered floors can also be observed among the ruins. Buildings, large and small, occur at number of places. Small structures consist of 2 or 3 rooms. The superstructure and most of the structures has disappeared since long and only the foundation walls are standing hardly two or three feet above the surface. The total absence of pottery among the ruined buildings is contrasted by the abundance of potsherds on other mounds formed of artificial layers of earth. The most prominent spots may be mentioned in some detail.

GROUP I

Near a small village of Shah Kapur, a mound measuring about 200 feet in length stands 20 to 25 feet high. From a distance it looks like a large heap of burnt bricks. Close examination revealed $3\frac{1}{2}$ to 4 feet wide walls of a large building with small rooms on the West. Some walls show patches of lime plaster on them. Amidst the confused heap of bricks, charcoal pieces were many but not a single potsherd was found. The sizes of the bricks are $13 \times 8\frac{3}{4} \times 2$ inches and $14\frac{1}{2} \times 9\frac{1}{2} \times 2$ inches.

About 100 yards far on the South-West and across a water distributory are the remains of 'Rumi' or 'Chaukhandi' type of graves. One of them stands intact but others have decayed.

GROUP II

It is situated some 500 yards South-East of Shah Kapur and consists of more than 15 small detached mounds which mostly contain the remains of burnt bricks or stone buildings. Ancient remains were also seen here and there on the way to Group II. One of the building remains consists of a large enclosure built of large blocks of sand-stones and measuring 140 feet 10 inches from North to South and $187\frac{1}{2}$ feet from East to West. The width of the enclosing wall is 5 feet-3 inches and survives now about 1 and 2 feet above the surface. A stepped entrance on the east provides access to a large courtyard surrounded by what seems to be a corridor. On the Western side are six rows of walls, running parallel to each other at 9 feet 3 inches distance. That part of the building on the Western side seems to have been roofed originally. The whole plan of the building resembles that of a mosque. Pottery and other objects were totally absent.

At another small mound situated about 150 paces to its South, the whole plan of building is visible. It measures 15×8 feet and has $3\frac{1}{4}$ feet broad walls. Size of burnt bricks is $14 \times 10 \times 2$ inches.

GROUP III

About 300 yards South-West of the mosque (?), is a girdle of closely connected mounds in the form of a semi-circle which measures about 400 feet in diameter and 50 feet wide. Numerous pottery pieces were collected from it.

The ruins at Shah Kapur are also called 'Doda Chanesar Mari'. In the old maps of Lower Sindh, it is recorded as 'Hingur'. It is located on the state land in Deh Murba, Tupa Shah Kapur, Tehsil Jati and District Thatta.

Pottery from Shah Kapur:—The surface collections from Shah Kapur show variety in the types of pottery. In addition to the bowls and jars, small vases of plain, light red or pale ware, some painted potsherds also occur. The decoration consists of a group of vertical black lines and dots painted on the shoulder of the pots having suppressed and flattened rims. Gray pottery pieces, painted glazed and imported Chinese stone-ware were also picked up from the surface. The superior class of painted glazed ware and Chinese Stone ware from Shah Kapur have precise parallel with the pottery of late Abbaside period at Banbhore. The settlement appears to have remained contemporary in part with rest of the Arab settlement in Sindh in about 11-13th century A.C. A number of small copper coins were also collected

III. NIND KOT

At a distance of 14 miles due South of Shah Kapur are the remains of a fort measuring about 1500 x 700 feet. Its superstructures have disappeared completely and as such only the foundations exist. The maximum width of the walls is 7 feet 2 inches including the earth infilling. Critical observation revealed 42 semi-circular bastions of the fortification wall. One of the bastions is 13 feet in diameter and shows 1'9" thick outer wall. The sizes of the burnt bricks used in the fort are $13\frac{1}{2} \times 9 \times 2\frac{1}{2}$ and $14\frac{1}{2} \times 9\frac{1}{2} \times 2$ inches. The whole outline of the fort is complete except on the Western side where the wall is not visible on the surface. Except a few structural remains in the middle, the whole surface inside the fort is flat. On the southern side facing the dry bed of a river, are the remains of large rooms outside the fort. The existence of gateway may be supposed on the Southern side.

Nind Kot is located in Deh Khark, Tupa Hassani, Taluka or Tehsil Jat, District Thatta.

Pottery from Nind-Kot:—The whole surface collection from Nind Kot consists of unpainted pottery, pale-red in colour or incised grey ware. Small flat-bottomed cups, knobbed lids, carinate small pots are of the same type which come from Shah Kapur. The incised decoration and the forms of the grey vessels, large pots with vertical neck and pieces of large storage jars with thick, flattened rims very much resemble those from the upper levels (11-13th Century A.C.) of Banbhore.

The fort must have served as a strong bastion of defence in the vast plains of lower Indus Country, controlling traffic and perhaps trade to and from the Arabian Sea. It is situated on the bank of the dried up branch of the Indus and 33 miles South East of the fort of Kalan Kot near Thatta. It may be presumed that the fort at Nind-Kot was in use when the settlement at Shah Kapur was flourishing. Glass pieces, copper coins and many unworked agate pieces are among the small finds.

EXCAVATIONS AT KOT DIJI

by

Dr. F. A. Khan

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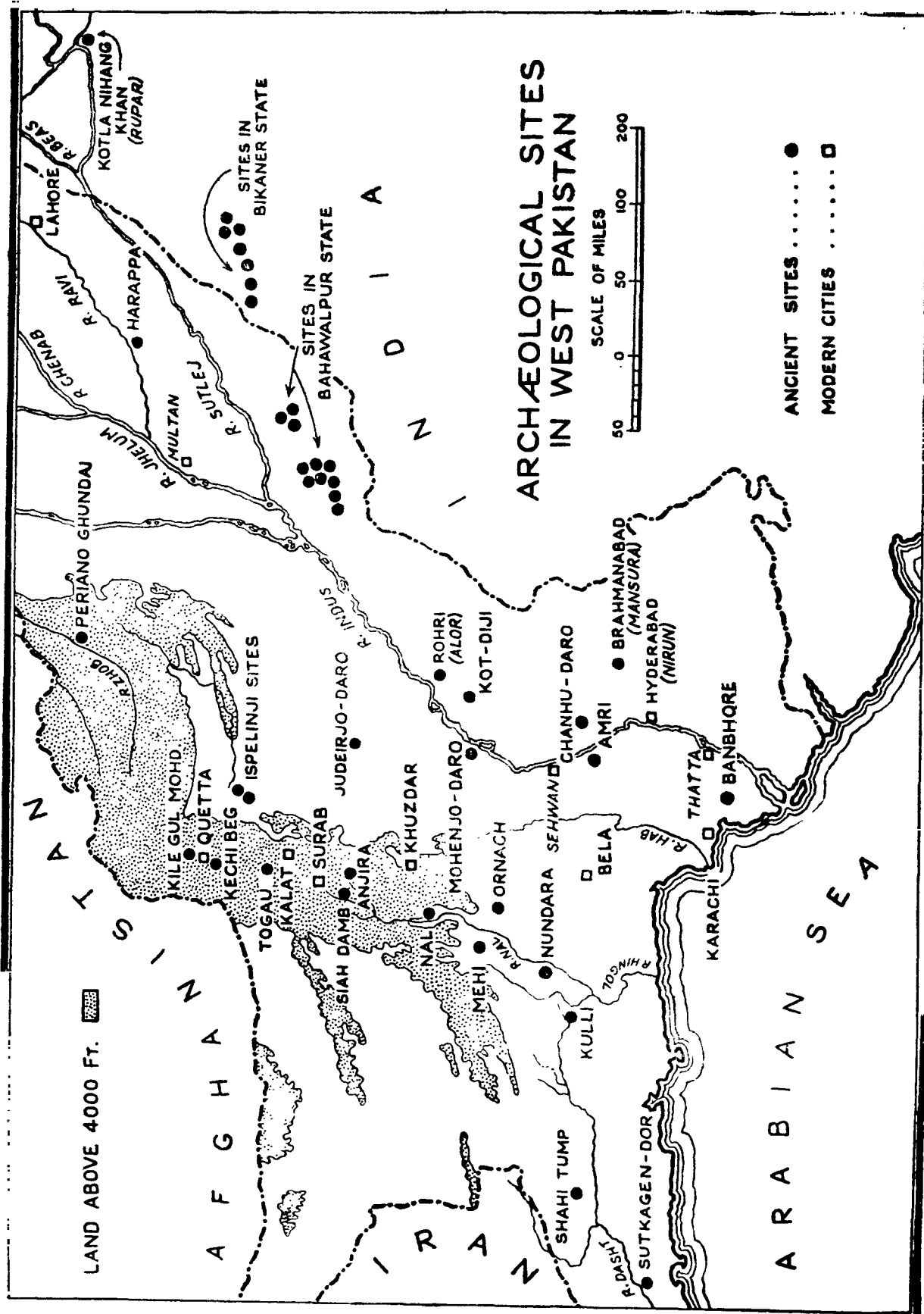


Fig. 1. Map showing Archaeological Sites in West Pakistan

I. INTRODUCTION

The antiquity of Pakistan before the discovery of Harappa civilisation did not go further than 1500 B.C., the date generally accepted as that of arrival of the Aryans in the sub-continent; and whatever rudimentary information we had of pre-Aryan days was from references in the Vedic hymns. The original picture of pre-Aryan inhabitants of the Indus Valley we have from these ancient sources is that of godless, lawless, and noseless rakshasas of hostile speech. But after 1921 when the archaeological excavations were started at the Indus Valley sites of Harappa and Mohenjodaro, it became evident that a civilisation possessing a high standard of art and craftsmanship and a well-developed system of writing had existed for a considerable period before the arrival of the Indo-Aryans. Unlike the Indo-Aryan invaders who still remain archaeologically unidentifiable and whose date of arrival in northwest Pakistan is not as yet archaeologically established, the excavations at Harappa and Mohenjodaro revealed a mass of material information about the civilisation of these early inhabitants. This civilisation—unique and mature in many respects—was contemporary in part with the Sumarian civilisation of Mesopotamia. The early stages of this Indian counterpart however could not be unravelled as digging was not possible in the water-logged lower levels at Mohenjodaro. Whatever its origin may have been, these excavations did at least establish that the civilisation endured for many centuries.

Since these epoch-making discoveries, further investigations have been carried out at Harappa, Mohenjodaro and other sites during the last three decades and have added significantly to our understanding of the shape and character of that civilisation without solving the important problem of its origin and antecedents.

Recently however short excavations at Kot Diji in Khairpur division of West Pakistan, which were conducted with a view to investigating the nature and character of small settlement of Harappa period in an outlying agricultural district, accidentally revealed early stages of Harappa culture levels superimposed upon thick deposits of a hitherto unknown culture of

still earlier date. The pre-Harappan settlers, whom we shall henceforth call the Kot Dijians, possessed a highly developed culture of their own, from which the Harappans appear to have borrowed certain ideas including systems of town-planning and fortification.

The Kot Diji site is situated on the national highway 15 miles south of Khairpur town, under the shadow of the medieval Diji Fort built on a rocky precipice on its south (Pl. 1). The main axis of the site runs east to west and measures some 600 feet; the width is more than 400 feet and the height from the surrounding field level is about 40 feet. The site has been subjected to heavy depredations and both earth and stones have been removed for use elsewhere. Even so, the excavations have revealed valuable information about the cultural succession of the site, and have given it a position of outstanding importance in assessing the Indus sequence.

Excavation during two short seasons was carried out by the Exploration Branch of the Department of Archaeology under my direction with assistance from Mr. Harun-ur-Rashid, Field Officer, Mr. Abdus Salam, Head Draftsman, Mr. Saddar Din, Exploration Foreman, and ten post-graduate students of history from the University of Karachi. Acknowledgement is also due to Mr. S. Siddiq Hasan, the late Surveyor of this branch, Mr. Shaukat Ali Zaidi, Pottery Recorder and Mr. Sirtaj Alam Khan, Photographer. Pottery and antiquities illustrated here have been photographed by Mr. Hasan Shakir, Photographer. Pottery drawings have been prepared by M/s. Manzoor Ahmed Siddiqi, Hasinuddin Qureshi, Senior Draftsman, Exploration Branch and Nabi-Ullah Khan Daudi, Head Draftsman.

We should be lacking in our duty if we failed to record our special acknowledgement and gratitude to His Highness the former Ruler of Khairpur State for making a grant of Rs. 20,000/- towards undertaking these excavations. In particular we are indebted to the then Chief Minister, Khairpur State, Late Mirza Mumtaz Hasan Kizilbash and his Chief Secretary, Mr. Hassan Habib, who not only evinced a keen interest in our work but spared no effort to further it by arranging for transport, armed guard and other facilities during our first season.

II. EXCAVATIONS

(a) GENERAL

The excavation of Kot Diji was begun in November, 1955. It lasted for the brief period of one month, but the results were very encouraging.

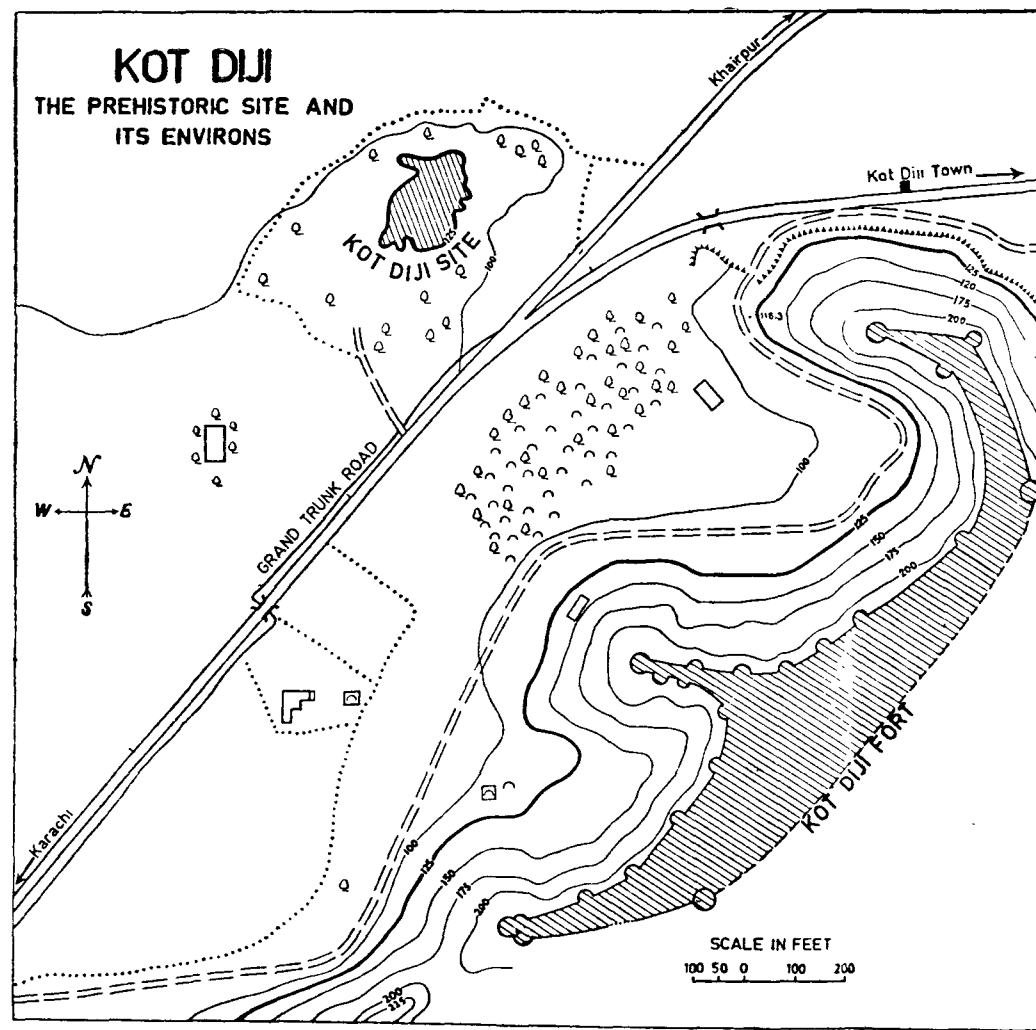


Fig. 2. Kot Diji—The Prehistoric site and its environs

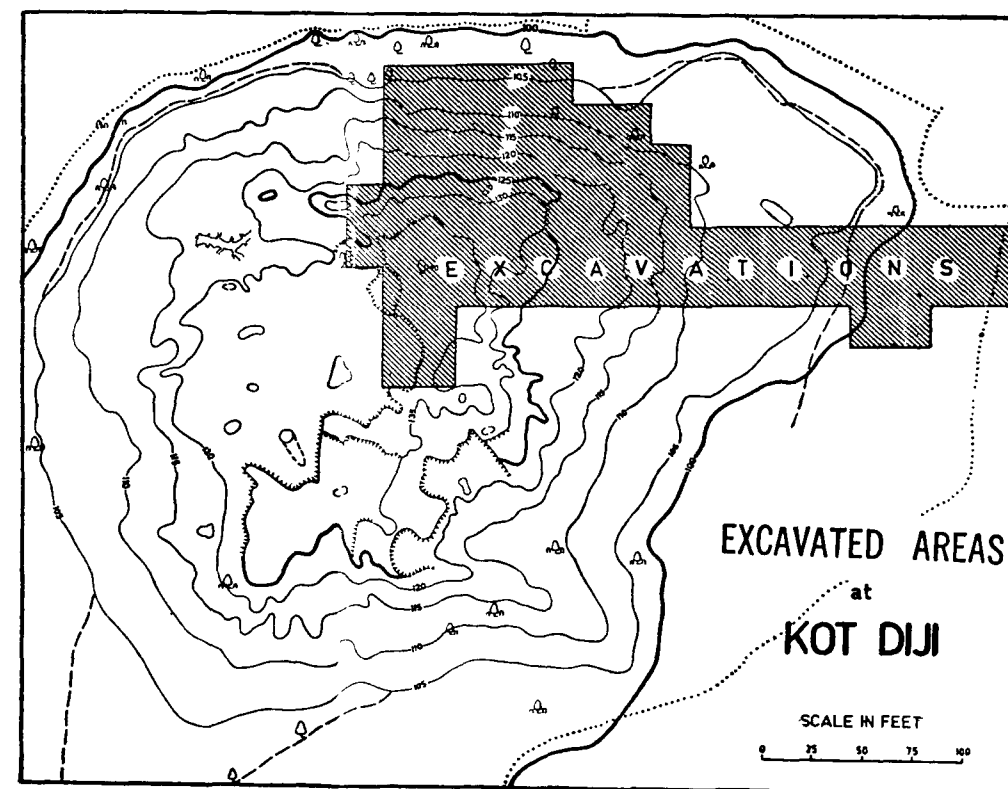


Fig. 3. Excavated Area at Kot Diji

Not only were the life and culture of a small outlying station of the Harappa civilization situated in the heart of a vast agricultural plain (Pl. I, b) revealed, to some extent, but a new and hitherto unknown cultural element was also observed in the lower levels. The first excavation, being restricted, could not throw sufficient light on the relationship of this new element with the Harappa civilization, and work was therefore resumed in 1957 from the middle of October to the end of December. On both occasions the excavation was of a limited nature, and was limited to vertical digging only.

The Kot Diji site consists of two parts: one comprising the citadel area where lived the ruling classes; and the other, the outer part of the city, which must have been inhabited by the artisan classes.

Two areas were selected for excavation: Area 'A' on the top and eastern slope of the mound, measuring 160 feet by 40 feet; and Area 'B' at the foot of the mound on the eastern side measuring 160 feet in length and 140 feet in width (Pl. XI, a).

Part of the northern slope of the mound was excavated during the first season. Though lower levels were reached at the edge of mound on that side, excavations in the middle of the mound could not be carried to that depth. Consequently, many problems which naturally arose during the course of the investigations remained unsolved.

(b) SUMMARY OF RESULTS.

The second season's excavations were directed mainly towards solving these specific problems. These pertained to the establishment of the relationship between the new cultural element and the known Harappa culture, as revealed by the stratigraphical sequence of the site. They have in fact enabled us to solve some of the main problems. A summary of the results is given below:

1. Excavations in the upper levels from layer (1) to (3) have revealed a mature phase of the Harappa culture.
2. In layer (3A) appeared an abrupt change in the cultural material. It was in this layer that Harappa elements first started, which continued right up to the top surface. Below this level was found a different ceramic industry which had lingered up to this stage from the earliest level, that is, layer (16) on bed-rock.
3. Along with the new ceramic ware, the remains of a pre-Harappan fortified citadel have been discovered.

4. The outer part of the town extended far beyond the limits of the fortified area, parts of which now lie buried underneath the National Highway and the surrounding corn fields.
5. The thick deposits of the pre-Harappan settlements of the site indicate that it was inhabited by a distinct, well-organised and prosperous community several centuries before the arrival of Harappans.
6. These inhabitants, who could be most appropriately called the 'Kot Dijians', possessed a well-developed culture. Evidence of this is provided by the simple but solid construction of their houses built in stone and mud-brick; the skill displayed in the manufacture of their wheel-made pottery which has no or little affinity with the Harappan ware; their highly developed stone implements which include arrow-heads besides micro-blades and scrapers; a terracotta figurine of a bull found along with Kot Diji pottery, representing a not inconsiderable skill in the art of modelling (Pl. XXVIII a).
7. The Kot Dijians remained in possession of the citadel for a considerable period, as indicated by 13 layers of accumulated mud-brick building debris containing some 11-12 occupation levels.
8. The 5 main occupations of the unwallled part of the town indicated a comparatively shorter or less intensive period of occupation than the citadel area.
9. The fortification wall of the citadel, strengthened by bastions, was raised over the bed-rock. It was built in stone and mud-brick; its external face was revetted with mud and mud-bricks. (Pl. III b, VI a).
10. The wall fell into disuse in later Kot Dijian times, when its top was occupied for habitation purposes.
11. There is no evidence to show that the Harappans also used the fortification wall. On their arrival they not only occupied the fortified area but extended outside the citadel.
12. The Harappan ware unearthed from layers (1) to (4) in some of the squares outside the fortified town appears to belong to the early phases of the culture when the art of decoration in black on bright red slip was still in the nascent stage. (Pl. XIV b).

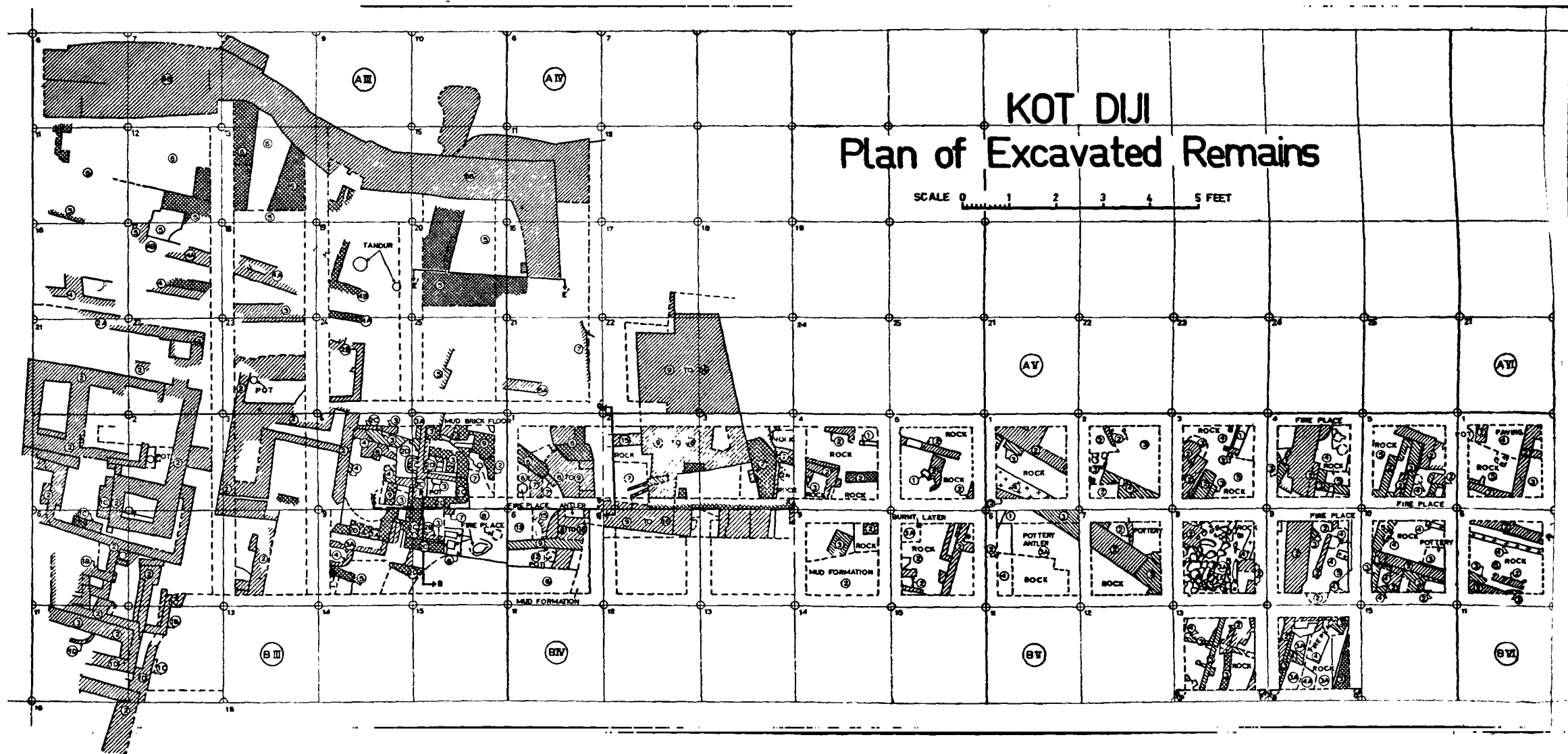


Fig. 4. Kot Diji—Plan of excavated remains

III. AREA 'A'—CITADEL

(a) HARAPPA CULTURE LEVELS

At first it was thought that a complete cross section driven through the centre of the mound revealing the strata both vertically and horizontally would provide an adequate answer to questions posed by the trial excavations, but difficulties cropped up. The top of the mound was so extensively damaged that it was not possible to find a single line across the mound where all the layers could be traced vertically and correlated without a break.

The difficulty was, however, mitigated by the fact that the upper levels contained only normal Harappan material. The lower levels were fairly well-preserved and we had to determine the exact level where the remains of Harappa and pre-Harappa cultures occurred together.

With that end in view, Area 'A' about the centre of the mound on top was selected. It included squares BIII/1 to BIII/13 and BIII/16. On account of the restricted nature of our work only a few complete plans of structural remains were brought to light. Excavations of layers (1) to (3A) clearly indicated that the sixteen and half feet thick deposit of cultural strata of the Harappans was the result of a long and uninterrupted occupation of the site. A brief account of the stratigraphical details is given below:—

Layer (1) In Area 'A' the top layer (1) all over consisted of debris of a mixed nature.

Layer (1A) constituted an occupation-level characterized by mud-brick floors and structures of solid character in squares BIII/1 and BIII/6. Scanty remains of stone and burnt brick foundations belonging to this occupation were observed in square BIII/12. Baked bricks seemed to have been re-used in this period, as could be seen in the western section of square BIII/12. Remains of mud-brick walls and floors in square BIII/1 and BIII/2 were found to rest on debris of layer (1B) which consisted of ashes, charcoal and mixed fallen materials, showing indications of probably a localized fire. Layer (1C) representing a regular occupation level is characterized by stone foundations with mud-brick

super-structures. Layer (ID) contained mixed debris of ashes, charcoal and pottery (Pl. V a).

Layer (2) is a regular occupation-level. It is well-presented by stone foundations with mud-brick superstructures. The foundations of undressed limestone blocks, set in mud-mortar, are deep and massive. Indications of mud-brick floors, associated with typical thick-textured, red-slipped Harappan storage jars and a bath tub with incised intersecting-circle decoration on its interior, have been unearthed in squares BIII/2 and BIII/6 (Pl. V, c).

Spacious rooms with stone foundations, mud-brick super-structures and mud-brick paved floors have been uncovered in a considerable area in occupation (2) level (Pls. V a, X a). A room cleared in square BIII/4 measures 14½ feet by 11 feet. Its floor was paved with mud-bricks. The average thickness of the walls is from two to three and half feet; their surviving height varies from one to four feet. All the walls are properly bonded. The roofs, which were probably flat, were covered with mud plastered reed mats. A fair specimen of the mud portion of a roof bearing the impression of a reed mat was unearthed in square BIII/2 (Pl. V, b). No entrances to the rooms could be traced. And no sign of drains has yet come to light; evidently the inhabitants spilled water outside their houses, as the villagers do now.

Mud-brick floors with small pots and pans, large storage jars and tubs in situ (Pl. V c), and innumerable antiquities including typical Harappan painted pottery (Pls. XV, XVI), beads, bangles and other miscellaneous objects, baked clay figurines of animals and mother goddesses (Pls. XXVI, XXVII b), bronze arrow-heads and well-finished stone implements (Pl. XXXIV a) have been recovered from occupation (2) level.

A well-regulated town-plan with lanes has come to light. A lane in square BIII/11 (Pl. X a) which comes from the west and takes a turn to the north, and a spacious street running from north to south between two blocks of houses in squares BIII/2 and BIII/7 deserve special mention.

This occupation (2) level represents a typical and mature phase of the Harappa civilisation.

Layer (2A) contained ashes, charcoal and mixed occupation deposit over which occupation (2) structures were

built. No structural remains have been observed in this debris-layer.

Layer (2B) seems to be an occupation level. But there are traces of ashes and charcoal, mixed with loose soil and debris. The bottom of this layer is marked with a thin burnt floor of mud, but no other structural remains have been noticed. The indication is probably that of a temporary occupation.

Layer (2C) represents a regular occupation with stone foundations, mud-brick walls and floors in a good state of preservation. The most distinctive feature characterizing this occupation horizon is a large unbaked brick-lined oven about four feet in diameter, containing ashes, charcoal and some potsherds, lying between squares BIII/4 and BIII/5. The intensive fire of this oven affected the nearby stone wall on the eastern side. This large oven suggests a regularised life and division of labour in the community.

Layer (2D) is an occupation layer with mixed stone and mud-brick as well as only mud-brick structures. A thin burnt floor of clay with a small pottery vase 'in situ', in square BIII/4, near the large oven of (2C) period, and mud brick floors in squares BIII/5 and BIII/10 with pots 'in situ' have been uncovered. In square BIII/9 mud-brick walls have been found constructed over loose ashy deposit. In square BIII/5 about 2 feet from the top surface a thin square-shaped iron sheet was found measuring $17\frac{1}{2}$ feet by $13\frac{1}{2}$ feet. It is attributed to a late period on the ground that it was unearthed from a disturbed debris-layer which accumulated over this occupation level.

Layer (3) is another main occupation level like occupation (2), well represented by stone and mud-brick structural remains, hearths and ovens, and storage vessels fixed on the floors. A large oven like that of layer (2C) in square BIII/4 was uncovered in square

BIII/10, and another hearth was visible in square BIII/4 in the south-east corner, near the stone foundation which was much affected by intense fire. The existing height of a well-preserved stone wall in square BIII/9 is three feet and a half, with light stone courses and one or two mud brick courses of the super-structure; width of this wall is two feet.

A large storage jar in situ was found in square BIII/5. Other objects including pottery, terracotta and stone implements represent a mature Harappa culture as found in occupation (2) level.

Layer (3A) is also an occupation-level, but only scanty building remains of stone are now left. A well-preserved stone wall was found in square BIII/9. In square BIII/10 a well-preserved mud-brick floor had been built just over a severely burnt and distinctly marked dark patch which spreads over the excavated area at this horizon. What is most interesting and significant is a sudden change in cultural material from this layer downwards. This break in cultural continuity together with intense burning, makes it reasonable to assume that the settlement suffered from great disturbance and probably total destruction at this level at the hands of new-comers.

From this layer Harappa culture commences upwards and continues to the present top level. Below layer (3A) appears the new ceramic industry, distinct from the Harappan as well as other materials associated with this new culture in a number of occupation levels down to the bed-rock.

The most distinctive feature characterizing the new type of pottery is its fine thin body, short beaded rim and fugitive broad bands in red, sepia and black at the neck. In texture, form and decoration the new type forms a distinct group which distinguishes it from the thick-textured black-on-red Harappan pottery (Pls. XIV-XVI). Its discovery is of great significance as it definitely belongs to a different group of people who flourished in this part of the Indus Valley before the arrival of the Harappans. This remarkable change from a thick to a thin type of pottery is the focal point in the occupation of Kot Diji site where—to repeat—in the upper levels occur

the elements of Harappa culture, and in the lower layers from (4) to (16), a new ceramic product (Pls. XVII-XXV).

(b) FINDS

Pottery unearthed from upper levels (1) to (3A), whether in texture, form or ornamentation, is typical of the Harappa culture, with its bright deep-red slip and decoration painted in black with familiar Harappan designs such as the pipal leaf, intersecting circle, peacock, antelope, sun-symbol, and various geometric patterns, and incised ornamentation (Pls. XIV-XV). The half-pipal leaf motif also occurs (Pl. XV). This design is found on the pottery of Chanhudaro, but it is conspicuous by its absence on the pottery of Harappa and Mohenjodaro. A number of potsherds inscribed with pictographic signs come from the Harappan levels. The perforated ware which is very common at other sites of the Harappa culture is not so frequent here (Pl. XVI). A small pottery vase in the form of a brass or wooden Kamandlu as used by Indian Sadhus reminds us of similar examples from Mohenjodaro.

Seals are rare. A steatite button seal with traces of blue glaze and a perforated knob at the back is of the compartmented type; while a broken steatite seal with finely engraved 'unicorn' is the only Harappan seal found so far in Kot Diji (Pl. XXXIII, a). Bronze objects include a fine blade axe, a couple of chisels and arrowheads, and a few bangles and rings (Pl. XXXIII, b). A round etched carnelian bead with white circle is of special interest. Such beads occur fairly largely on all the principal sites of the Harappan civilisation. In north-eastern Iran, these beads occur in Hissar III and Shah Tepe II levels. They are also found in Susa II levels in the south-west of Iran. In Mesopotamia they are attested at Kish, Tell Asmar and Ur.

Terracotta figurines of mother goddesses and model animals were not common; only three figurines of mother goddesses and about a dozen of bulls were found (Pl. XXVI, XXVIII, a). Beads, bangles and cones were numerous (Pl. XXIX). The peculiar barrel-shaped terracotta pestle-like objects, hollow inside with a small perforation on one end and clear marks of rubbing on two flat sides, were also not uncommon (Pl. XXXII, 2). Similar specimens from Mohenjodaro have been described as 'flesh rubbers'. But they are too clumsy to be used for scrubbing the skin; their smooth and rubbed surface rather indicates use for grinding some soft material, though the hollowness and the perforation are difficult to explain. These objects are

quite common at the newly discovered large Harappan site of Judeir-jodaro, about 18 miles north of Jacobabad.

The great frequency of terracotta 'cakes' tends to support our view that these crude, flat, half-baked, smoke-stained triangular or round-shaped objects were perhaps used for making temporary or portable fireplaces—something like those one usually finds in this country for cooking meals on festive or ceremonial occasions, made quickly by arranging a few bricks only. Similarly, three or four of these cakes in different sizes, placed one upon another and arranged in three groups, perhaps could help the housewife to construct her fire-place whenever and wherever needed at a moment's notice. In Kot Diji these cakes were invariably found in rubbish heaps, associated with ashes and charcoal, and very much affected by fire, which strongly suggests some such use for them. The view that these crude objects might have been used as model cakes for offering purposes seems extremely unlikely. On the other hand it has been suggested that they were used for toilet purposes.

Incidentally it has also been observed that broken terracotta cakes as well as half baked smaller ones of crude fabric and irregular shape have occasionally been used as concrete material for floors and foundations, probably because they were cheaper and more easily available than brick concrete.

(c) BREAK IN CULTURAL SEQUENCES

As already stated, below layer (3A) there was a break in cultural sequences in layer (4). A thick deposit of burnt and charred material, on the top of layer (4) spreading over the entire site, completely sealed the lower levels off from the upper ones. This prominent and clearly marked burnt layer strongly suggests that the last occupation level of the early settlers (that is, the Kot Dijians) was violently disturbed, and probably totally burnt and destroyed.

The sudden disaster was indeed connected with the movement of newcomers into this part of the country. Who were they? Undoubtedly the Harappans, whose abundant relics in the superimposed upper levels leave no room for doubt about their identity. Subject to confirmation from investigations of other sites of this period, the results of Kot Diji excavations make it reasonable to assume that the Harappans—whose significant achievements during their prolonged stay in the Indus Valley included a pictographic script not yet deciphered and an elaborate system of town-

planning and city-defences — borrowed some of these ideas from the Kot Dijians, their predecessors, at any rate on this site where the latter lived long before Harappans in well-built mud brick houses in a fortified town (Pl. II b).

(d) KOT DIJI CULTURE LEVELS

Below level (3A) occupation, layers (4) to (16) which included a number of occupation-levels associated with Kot Dijian culture pottery, consisted of a thick accumulation of cultural deposits reckoned to be 17 feet in depth. Layers of ashes and charcoal were indicative of the settlement having suffered more than once from such conflagration, but there is no break in the continuity of ceramic industry. The Kot Dijian pottery continued throughout, though it was progressively thinner, lighter and plain in the lower levels.

Excavations have revealed interesting features in the Kot Dijian levels. In most of the occupation-levels were found massive walls of sun-dried bricks. In certain cases the width is more than 5 feet and the walls are properly oriented (Pls. VI b, X b). The bricks are massive and measure $15'' \times 7\frac{1}{2}'' \times 3\frac{1}{2}''$. Mud-brick lined community ovens were a common feature (Pl. VIII a). In one of the levels was unearthed a kiln with well-preserved lined funnel, 3 feet and a half in height. On its southern side was the brick wedge-shaped depression in which was fitted the nozzle of the bellows (Pl. III a).

Layer (4) was an occupation level represented by solid stone foundations and mud-brick superstructures in squares BIII/4, BIII/5 and a mud-brick wall in square BIII/10. Scanty remains of stone and mud-brick are also traceable in square BIII/9. We first observed Kot Dijian pottery in this layer, where this culture ends. Its floor is also marked by a thickly burnt deposit, spreading over the entire excavated area.

Layer (4A) represented an intervening debris accumulation. Its bottom and the top of layer (5) were marked very distinctly by a thick and intensely burnt line which is visible all over the exposed portions of the mound at this level. This indicated a destructive fire which may represent the first attack by the invaders but

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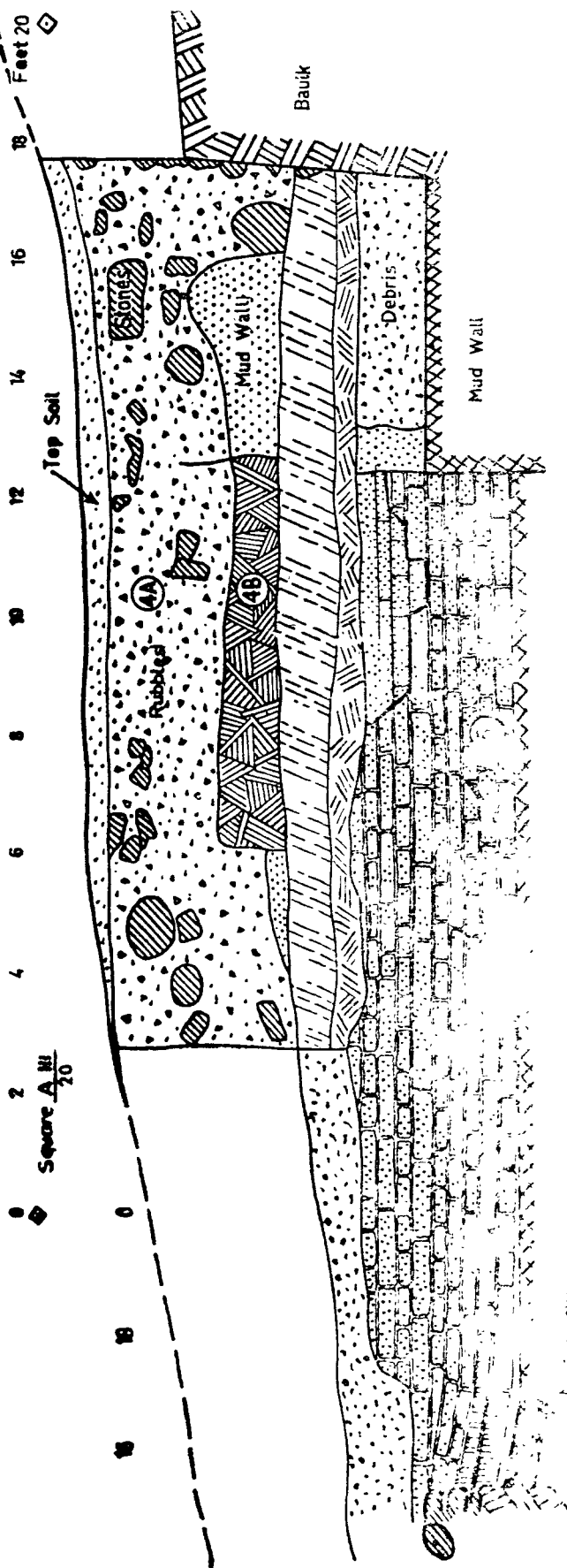
Square A III
20

Fig. 5. Kot Diji Excavations; square A III/20, Section EE, Looking South

may equally be caused by an accident, as no break in the ceramic industry was observed (Pl.III a).

Layer (5) was an occupation level associated with Kot Dijian pottery. Three stone foundations in square BIII/5 and solid mud-brick walls in squares BIII/9 and BIII/10 were uncovered in this level. Traces of a fire-place were visible just on top of the lower area in square BIII/10, which appeared to have been much disturbed in recent times. The bottom of this layer (5) was also marked by a thick, dark burnt patch which is faintly noticeable in other squares also.

Layer (5A) was a debris-deposit containing Kot Dijj pottery.

Layer (6) a regular occupation level, was represented by well-preserved and widespread mud-brick floors with pottery *in situ*, solidly built mud-brick walls and sun-dried brick-lined fireplaces. A fine specimen of a double compartmented fireplace in square BIII/10 (Pl. III a). and other fireplaces in square BIV/1 and BIII/9 are noteworthy. A massive mud wall in square BIII/4 was uncovered, and a large pot was found *in situ* on the floor in square BIII/9. A large number of potsherds representing specimens of Kot Dijian short-necked vessels with colour bands at the neck have been unearthed in squares BIII/4, BIII/5, BIII/10, BIII/9 and BIV/1. A heavy circular formation of mud in front of the defensive wall on the west side in squares BIV/1 and BIV/6, and a *pise* wall in square BIV/1 are associated with this level. Extensive use of mud-brick is the distinctive feature of Kot Dijj levels.

Layer (7) represented an occupation level marked by Kot Dijian types of pottery (Pl. LXXVIII), stone and mud-brick walls, and floors containing mud-brick lined fireplaces in squares BIII/10, BIV/1 and BIV/6. There are unusually large fireplaces in square BIII/10 and a well-preserved brick-lined floor with

fireplaces in BIV/1. A wide drain in square BIV/2, lined with small stone blocks has been uncovered in this layer, which goes right over the fortification wall (Fig. 2). Formations of thick debris — accumulation in layers (7) and (8) on top of the defensive system indicates that the fortification was not in use during and about these periods.

A marked difference in the composition of layers from this level downwards was observed. In marked contrast to the upper levels of mixed debris, ashes and charcoal mixed clay, these lower layers were composed of hard and compact clayey material. Only lines of pottery and other occupational remains and fireplaces distinguished them from one another. The obvious explanation is that, while in the Harappan levels building material was mostly of stone and occasionally of burnt brick, in these lower levels it constituted mostly of mud-bricks, which after disintegration became solid and hard clay, thicker and indistinguishable except by the line of the floor with remains in situ. Soft and loose debris like ashes, charcoal and innumerable terracotta cake bits deposited against stone walls of Harappa period were absent in these Kot Diji levels.

Layer (8) was another occupation-level. There were mud-brick walls and two fire-places in square BIII/10 and walls in square BIV/6, with great frequency of pottery indicating an intensive occupation (Pl. VIII a).

Layer (9) was also an occupation-level, proved by the profusion of Kot Dijian pottery, a large fireplace in square BIV/6, stone walls in square BIV/1 and BIV/6 and hard mud formation in the southern half of square BIV/6 (Pls. VIII a, IX).

Deep diggings below this level were confined to two squares only, namely, BIV/2 and BIV/6. These pits have been dug down to bed rock, but as they became progressively narrower and more confined, the area investigated in these lower levels was very small.

Layer (10) in this layer evidence of occupation was indicated by potsherds unearthed *in situ* on the floor and two fireplaces in square BIV/6 (Pl. XV). Kot Diji pottery with wide bands was common (Pls. XLVIII-XLIX).

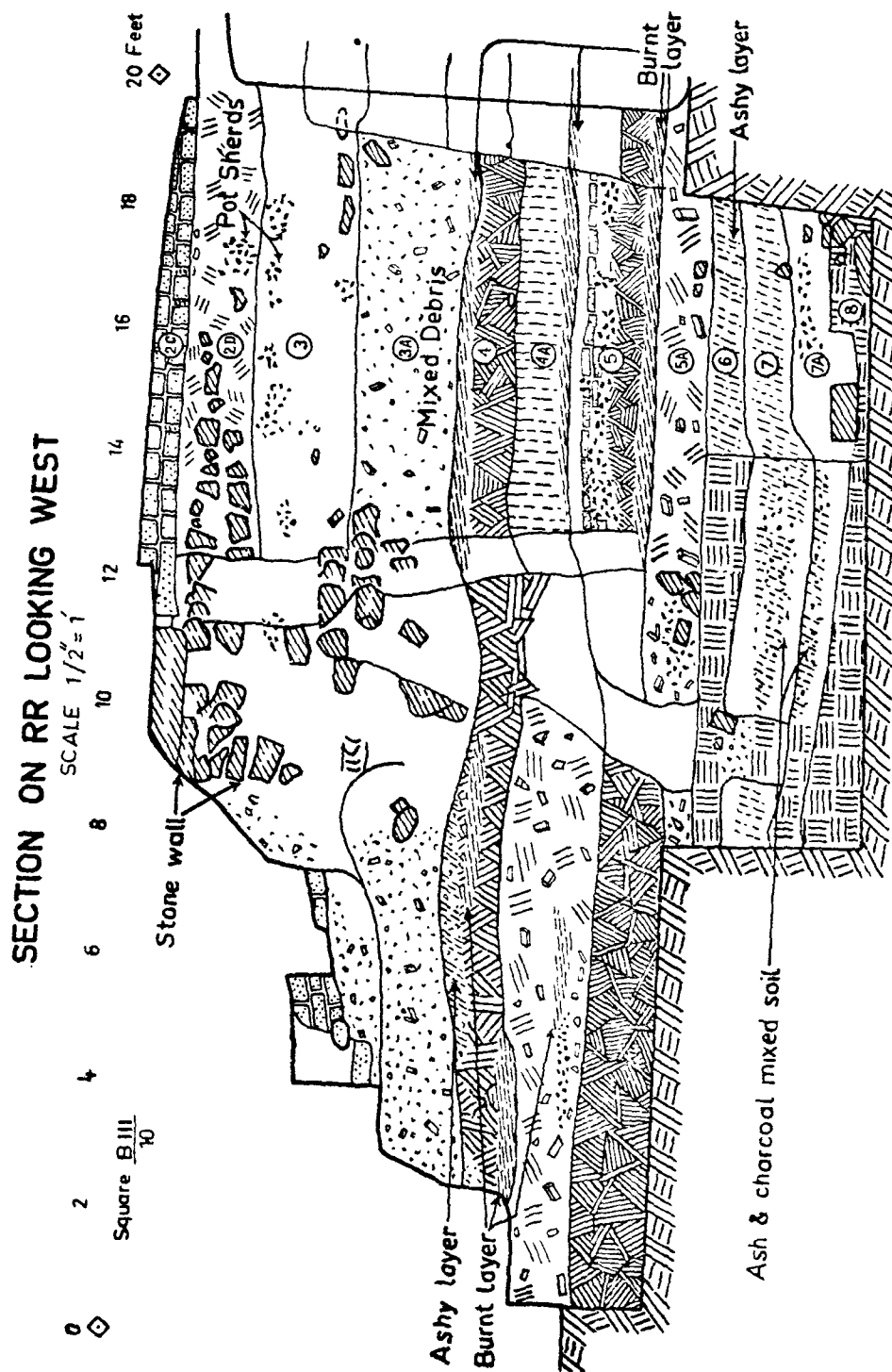


Fig. 6. Kot Diji Excavations; square B III/10, Section on RR looking west

Layer (11) was a hard and compact clay deposit without any visible sign of structural remains; but there were traces of mud-bricks associated with Kot Diji ware.

Layer (12) was a regular occupation-level with stone wall and a large storage vessel *in situ* near it on the southern side of square BIV/6, a fireplace and a large quantity of pottery, with one big antler '*in situ*' on a mud-floor in the north side of square BIV/6, (Pls. XVII-XIX).

Layer (12A) may also have been an occupation-level with much pottery, charcoal and other debris, but no structural remains.

In the deep digging of square BIV/6, confined to a small area, it was quite difficult to ascertain the true characteristics of a layer. It is possible that characteristics of a regular occupation-layer may have been missed in such a confined area which allowed only one man to dig in semi-darkness. I hope to confirm these results in the near future by enlarging the area of deep diggings after removing some of the remains that stand in our way.

Layer (13) was a hard and compact clay deposit like layer (11) without any visible trace of walls or floors, though there are mud-bricks and Kot Dijian ware (Pls. VIII c, IX).

Layers (14) & (14A) were regular occupation-levels associated with Kot Diji pottery, which occurred in profusion, and also ashes and charcoal. But no structural remains were found.

Layer (15) was a regular occupation-level associated with early Kot Diji Pottery and a well-built stone wall which joins the massive defensive system (Pl. IX).

Layer (16) represented the earliest occupation on the bed-rock. It was composed of softer sandy soil mixed with potsherds. The quantity and quality of pottery recovered from this deep level in the small confined area was sufficient to indicate the

prosperity and high cultural standard of the community which occupied the Kot Diji site in this level. Evidently this was the original occupation of the site. Miniature pottery of fine texture is common in early levels.

(e) THE DEFENSIVE WALL

The most impressive structural feature of the Kot Dijian level was the defensive wall of the citadel. It is of considerable height and width. It was raised on bed-rock; the lower part was built with undressed limestone blocks and the imposing structure was raised above with mud-bricks most of which have long since decayed and gone. Clearance has revealed on the northern and eastern sides the regular courses of large stone blocks properly set with mud mortar. That its inner stoneface was not plastered with mud, was observed when digging deeper along its western face in square BIV/1 from top to bottom on the inside. Internally, it slanted at an angle of $8\frac{1}{2}$ degrees and was reinforced in the north-eastern corner with a $2\frac{1}{2}$ feet wide stone revetment bonded with the foundation course (Pl. VII). Externally, it was strengthened with bastions at intervals. One such bastion with complex arrangement has been revealed in the north-eastern corner; its length is $31\frac{1}{2}$ feet and width 20 feet (Pl. III b). The complex character of this structure remains to be fully investigated. The outer face of the fortification was revetted with mud-bricks (Pl. VI a). Of entrances none could be exposed fully in the restricted area under excavation. On the eastern side the wall takes an inward turn and joins a massive stone-structure $3\frac{1}{2}$ feet wide which has yet to be investigated further.

At its base the fortification has considerable thickness which is still to be fully determined. Its height including the mud-brick superstructure, as far as preserved, varies from 12 to 14 feet. The stone substructure, which is intact in square BIV/1 is 10 feet in height, (Pls. VII) and the mud-brick part which has survived above is about 2 feet high (Pl. VI a).

On the north side the wall has been cleared to a length of 108 feet and is found standing to a height of $5\frac{1}{2}$ feet (Pl. II). It shows the same massive character. Its western and southern wings have suffered considerable damage owing to depredations, but there are traces of what appear to be bastions in the south-eastern and south-western corners.

The occupation-levels revealed from top to bottom in square BIV/2 indicated that the inner habitation-areas were very near the citadel wall.

which served as the back part of most of the houses. In the last stages of its history the fortification wall fell into disuse and the Kot Dijians seem to have used its top for occupation-purposes (Pl. VII). There is no evidence to indicate that the Harappans reused it.

The citadel with the Kot Dijian pottery represents perhaps one of the earliest fortified sites of the subcontinent. It implies a well-organised community, capable of heavy and co-ordinated labour.

(f) FINDS

(i) KOT DIJIAN POTTERY.

The finds in Kot Dijian levels, particularly the lower ones in the two narrow deep pits, are confined almost exclusively to pottery; and our studies are therefore based principally on this material.

Pottery recovered from layers (3A) to (3C) just on top of the heavily burnt and charred line which divides the vertical sequences of the mound into two distinct cultural divisions, represents both the mature Harappa and the new element, the Kot Diji pottery. Though the earlier culture of the Kot Dijians appears to have some influence on the development of a few geometric patterns of the Harappa ware, such as the fish-scale, intersecting circles and roundels there is no indication of an intermediary or transitional stage of development in style at this level; the layer of junction is just an accidental mixing up of two different elements, when they came into sudden contact.

Below the burnt and charred line, that is from layer (4) downwards, there is a complete break in cultural sequences; and the specimens recovered from layers (4) to (16), that is, down to the earliest settlement on the bed-rock, represent the new Kot Diji culture. The most distinctive features of this pottery are its fine thin body, short beaded or slightly everted rim, fugitive broad band round the neck in red, brown, sepia or warm black, varying from one to three inches in width, painted on a cream or dull red slip. It is wheel made. Its clay is well-levigated, and the ground varies from pinkish to red colour. It has no visible affinity with the normal Harappan ware either in texture, form or decoration.

Though this pottery is recognisable by these broad features, which remained unchanged from the beginning to the end of the Kot-Dijian settlement, stratigraphical studies revealed stages of development in its style of decoration and, to some extent, in its texture and form also. In

the earlier stages it is distinguished by thinner texture, a squat globular form and almost rimless and neckless open mouth. The decoration was confined almost exclusively to the characteristic neck band. In later stages the neck and rim became gradually more developed and pronounced, while new decorative elements like horizontal and wavy lines, single loops, roundels and simple triangular patterns were introduced, which gradually became multiple and complex, taking the embryonic shape of such well-known Harappan motifs as fish scales, intersecting circles and linked roundels.

The painted decorations were executed with a careful, precise and delicate hand, in contrast with the highly stylized, bold and carefree style of the Harappans. The geometric patterns and the hands are solid; hatched fillings being very rare, and there is no over-crowding of motifs. The overall impression is a delicate elegance and simplicity.

The principal form is represented by a squat, globular vessel of medium size with short everted or beaded rim. Other forms include dish-on-stand, both squat and long type; thin and delicate vases; flat-based and straight-walled cylindrical vessels, bowls, shallow plates of thin grey fabric; beakers, jars, covers and lids.

(ii) MINOR ANTIQUITIES.

In the lower levels from Layers (4) to (16), representing the Kot Diji culture, there is a sharp decrease in minor antiquities. They however provide evidence of a highly developed culture. In comparison with the Harappan specimens, they show a superiority in shape and workmanship as well as in technical skill. This is apparent in stone objects, the largest of the groups, which include fine micro-blades and sharp and thin long-knife blades, some with used and notched edges. Terracotta objects, very few in comparison with the collection in Harappan levels, include toys, plain and painted bangles, cakes, cones and beads.

(g) CULTURAL SEQUENCE.

From the sections exposed in squares on top of Area A, the Citadel pottery and other associated objects have enabled us to construct a stratified cultural sequence from the uppermost to the lowest levels on the bed-rock.

In all, 16 principal layers, with 13 subsidiary layers containing 21 occupation levels (Fig. 7) associated with building remains have been clearly identified in the following sequence:--

Layer (1) Top debris containing Harappan material.

- Layer (1A) Occupation-level; the existing latest Harappan settlement.
- Layer (1B) Debris
- Layer (1C) Occupation.
- Layer (1D) Mixed debris.
- Layer (2) Occupation; the principal Harappan settlement.
- Layer (2A) Debris, containing ashes, charcoal and occupation deposits.
- Layer (2B) Occupation.
- Layer (2C) Occupation.
- Layer (2D) Occupation.
- Layer (3) Occupation; the earliest Harappan settlement.
- Layer (3A) Occupation level containing mixed Harappan and Kot Diji cultural elements.

BREAK IN CULTURAL SEQUENCE

- Layer (4) Kot Diji occupation-level.
- Layer (4A) Debris
- Layer (5) Occupation.
- Layer (6) Occupation.
- Layer (7) Occupation.
- Layer (8) Occupation.
- Layer (9) Occupation.
- Layer (10) Occupation.
- Layer (11) Mud brick formation, no visible sign of structures.
- Layer (12) Occupation.
- Layer (12A) Occupation.
- Layer (13) Hard and compact layer, no visible sign of structures.
- Layer (14) Occupation.
- Layer (14A) Occupation
- Layer (15) Occupation-level associated with stone wall.
- Layer (16) First Kot Diji occupation on bed-rock.

NATURAL ROCK

The stratification clearly indicated that in the upper layers from (1)

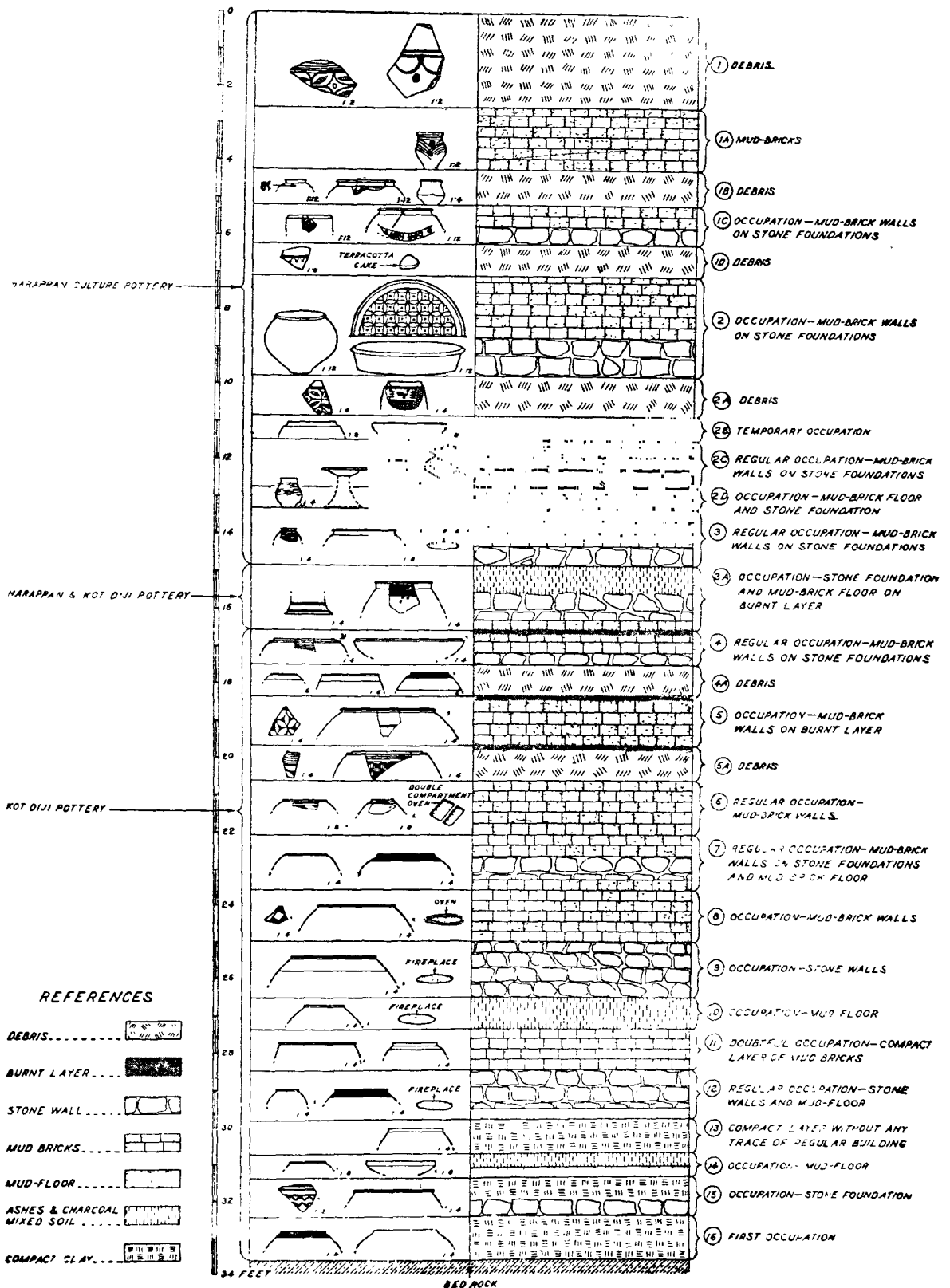


Fig. 7. The Kot Diji sequence showing Harappa and pre-Harappan 'Kot Diji' levels

to (3) occurred Harappan ware. In Layer (3A) Harappan pottery was also found along with the light and thin ware of the Kot Dijians. Their presence together indicates a stage in which they were in use simultaneously. From the next layer (4) to (16) was found only Kot Dijian pottery.

IV. AREA B: OUTER CITY

(a) THE SEQUENCE

The second area selected for excavation was outside the citadel on the eastern side where very significant features were observed. Here, in a 160 feet long and 40 feet wide trench, the numbering of layers has been kept separate from that of the citadel area, since the absence of a continuous and correlated section across the fortification wall prevented close co-ordination. The accumulation of cultural debris is much less here, consisting of only five main layers with a few subsidiary layers in some of the pits. In almost all the squares scanty stone remains have been found on the surface of the ground associated with an assortment of pottery—glazed potsherds of recent times mixed up with Harappan and Kot Dijian pottery.

Layer (1) consisted of debris associated with scanty structural remains and pottery of mixed character—Islamic, Harappan and Kot Dijian but Harappan sherds predominated.

Layer (2) had more regular buildings with well-set stones. But what was more important was the presence in this layer of Harappan red-slipped ware, which is mainly plain, side by side with the Kot Diji pottery of an altogether different fabric, slip and decoration which generally predominated in this level. In some squares normal Harappan pottery continued down to Layer (3): below that it occurred with the Kot Diji type. But as stated above, in most of the squares the Kot Diji ware started in layer (2) and continued down to the lowest layer (5) (Pl. XIII a).

It appears probable that the occupation on this part of the site ended earlier, and during the course of long settlement on the citadel mound later material fell from the top and became hopelessly mixed up with early elements, thus making it difficult to date these levels.

Layer (3) represented the Kot Diji culture in which that pottery was alone present. This level was marked by stone

KOT DIJI

SECTION PP LOOKING SOUTH

SQUARE BV/14

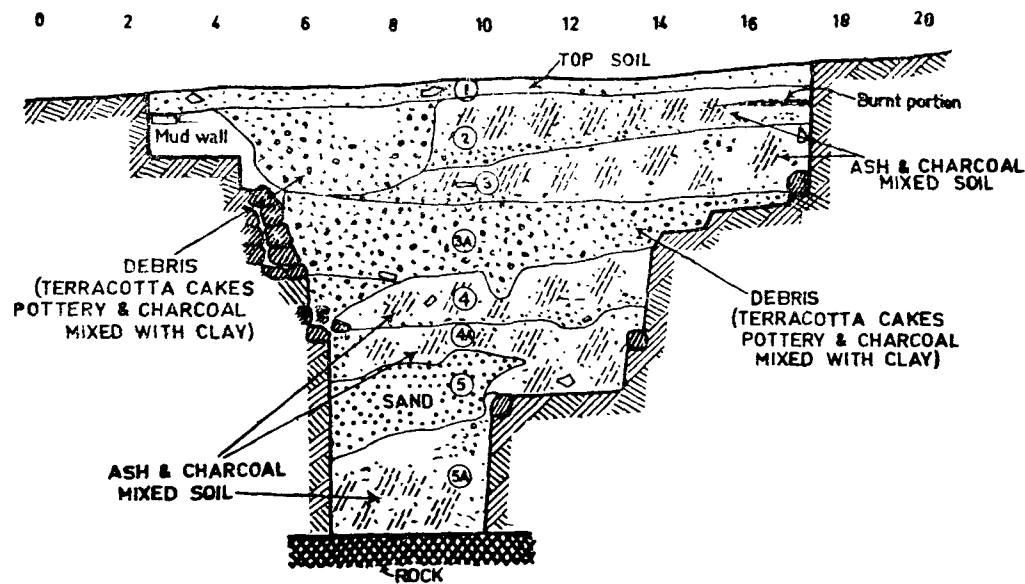


Fig. 8. Kot Diji Excavations; square BV/14, Section PP Looking South

KOT DIJI

SECTION ON OO LOOKING SOUTH

SQUARE BV/13

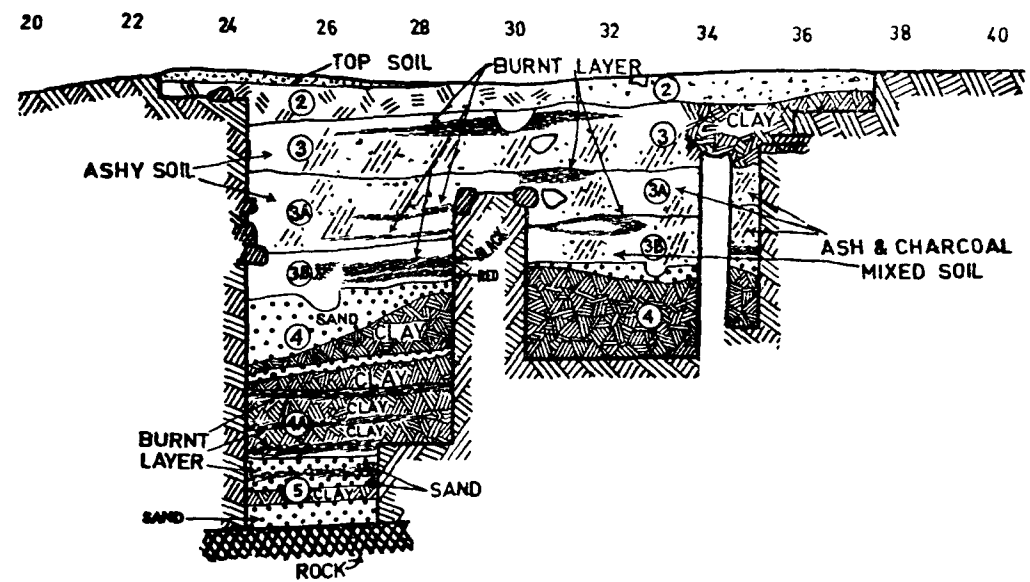


Fig. 9. Kot Diji Excavations; square BV/13, Section on OO looking South

foundations, its top being significantly emphasized by a thick burnt band. There were traces of mud-brick structures in some of the squares.

Layer (3A) was associated with Kot Diji ware. In some places it was an occupation-layer with regular floors and structures, but in other places it was debris only, without any indication of occupation. In some of the southern squares it formed a sandy deposit (Pl. XIII b).

Layer (4) was a regular occupation-level with Kot Diji pottery, hearths and ovens on a hard clay floor, the bottom being marked in most cases by a burnt deposit and a thick, dark ashy line. In some of the squares on the western side there is a sandy deposit which is not uniform everywhere, and appears to have been deposited by natural agencies.

Layer (5) an occupation-level on bed-rock, represented the earliest settlement of the site. This layer was very thin at places, mostly on the northern side where the bed-rock rises, but quite thick on the southern and north-eastern side, where the bed-rock slopes down. In some of the squares stone foundations with mud-brick super-structures were associated with this occupation-level

This cultural sequence confirms our view that the original settlers of Kot Diji site were a people who manufactured a thin and light type of pottery with short everted rim and broad bands in different shades at the neck on pinkish slip.

Two squares in Area 'B' require separate mention because of the interesting observations made in them.

SQUARE BV/6

In this square was a pottery-sequence of extraordinary interest, which should be of great help in our investigations. Here layer (1) represented late material such as glazed potsherds mixed together with Harappan and pre-Harappan pottery. Layer (2) contained typical Harappan pottery associated with stone implements, a bronze blade-axe and other miscellaneous objects. In layer (3) ashes and a burnt surface on the top of the layer

indicated heavy burning. The sudden appearance of Kot Diji pottery at this level is associated with the traces of burning and destruction of the place. A beautiful vase, medium-sized and typical in shape of Kot Diji ware has been recovered from this layer. It has 'fish-scale' design which shows a further stage from the mere continuous loop designs found on the pottery of early levels, to the highly stylised Harappan 'fish-scale' motif. In layer (3A) of this square was found a beautiful vessel with a complex design depicting a horned deity in black and white and on a deep brown body. It is an exceptional and well-developed specimens of the Kot Diji ware, unique in more than one respect, and may lead to interesting results in the study of this new culture.

SQUARE BV/8 (PL. XXXIII)

Some large limestone blocks associated with layer (3A) of this square point to an effort of those early people to check heavy annual floods which came from a nearby stream (Pl. XIII b). The sandy deposits left by floods in many squares at this level have already been mentioned.

The excavated parts in the lower town have partially revealed the plan of a lane in the centre of the area in square BV/1 running from east to west between the massive stone walls of the houses. Complete plans, buildings and houses however could not be revealed in the restricted area so far excavated.

The slope of the bed-rock on the south and south-eastern side is gentle and gradual, permitting occupation with structures of stone and mud-bricks, properly oriented. Traces of post-holes and fire left on the bed-rock attest to the first occupation of the lower city. The stone blocks used in building at the lower levels are finer than those used in the citadel area.

It must be stated that owing to the very restricted space available in the deep diggings and the limited area of the excavations in general, it is not easy to come to any definite conclusion about all the characteristics and significance of a layer or occupation-level. Horizontal digging over a large area above can give us this information.

(b) STRUCTURAL REMAINS

Excavation outside the citadel confined to the long narrow trench could not reveal complete building plans though it has provided enough specimens of the new type of pottery in layers (2) and (3), in which the associated structural remains are of Sun-dried bricks erected on stone foundations. Layer

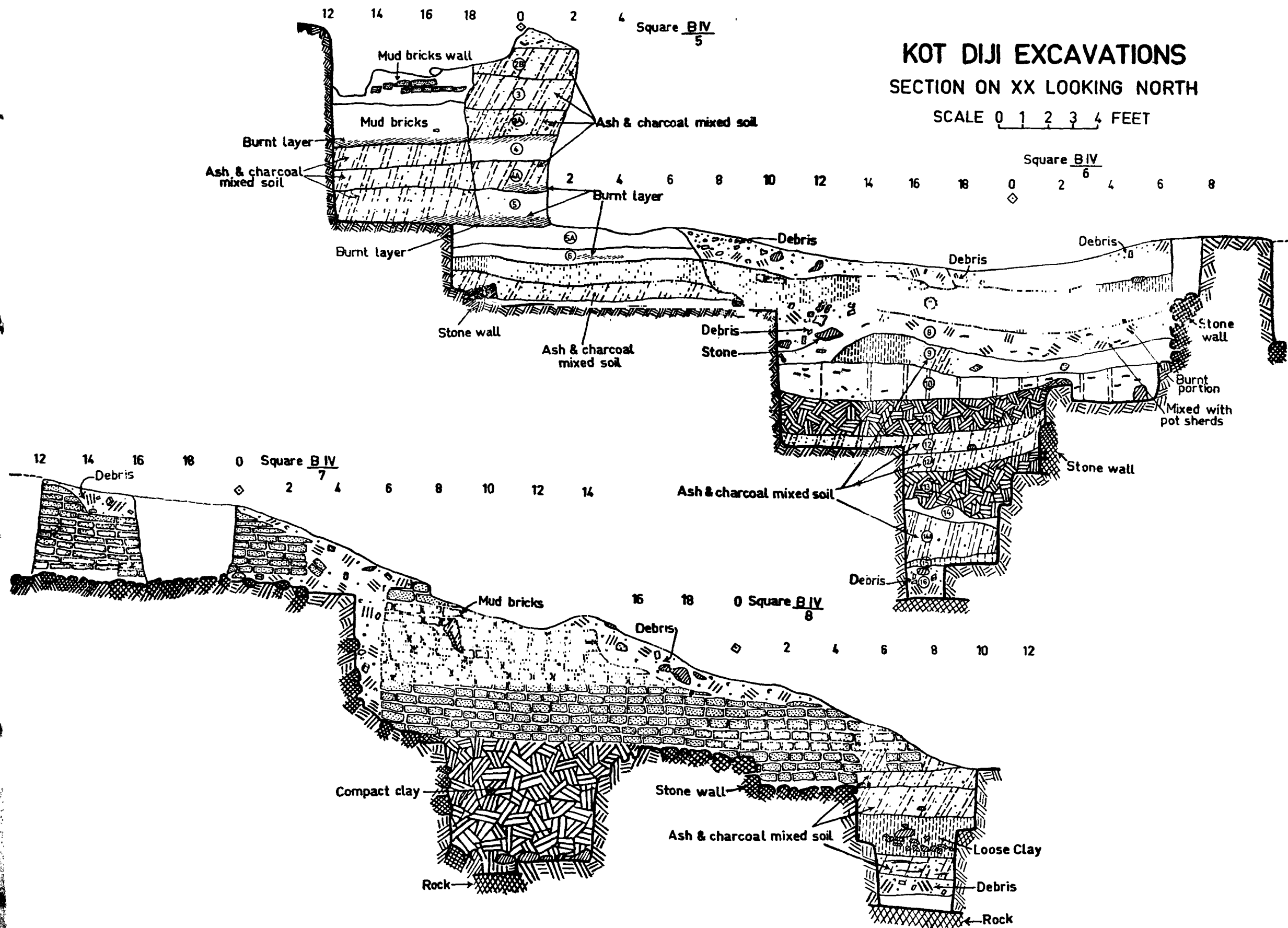


Fig. 10. Kot Diji Excavations Section on XX Looking North

(4) is characterised by the frequency of the new (Kot Diji) type of pottery associated with scanty stone walls, clay floors and a number of round hearths or ovens (Pl. XII). In layer (5) an absence of stone remains is noticeable; structures were of mud-brick.

(c) FIRE AND FLOODS

In the lower levels, traces of burnt material and ashy layers are spread over a large area more or less uniformly below layer (2). It has been observed that the Kot Dijian pottery appears predominantly or exclusively in most of the squares from layer (3). It seems probable that the thick burnt layers at certain levels may have been connected with the change in the cultural material. It may reasonably be assumed that these burnt layers did not represent an accidental fire but a violent conflagration which seems to have engulfed and destroyed the settlement of the Kot Dijians and paved the way for the Harappan occupation over the whole of the early settled area. In that case layer (3) of this area B outer city could be bracketed with layer (4) of Area A—Citadel.

On the southern side of the squares which have yielded Kot Diji pottery, a thick deposit of clean river sand is observed between layer (3) and (4). It appears probable from the slope of the bed-rock and the aspect of the present surface that in ancient times a stream flowing on this side of the mound and the hill underneath the Diji Fort could have caused occasional floods, as a result of which a thick sandy layer was deposited here over layer (4). At this level in one of the trenches huge limestone blocks were unearthed, evidently piled up there to check the rush of flood-waters. (Pl. XIII b).

(d) FINDS

The plain and painted pottery recovered from this area provides a very interesting study. As already stated layer (1) on top yielded both Harappa and Kot Diji culture pottery, but Harappa specimens were predominant; while layer (2) also yielding mixed cultural materials, is predominantly Kot Dijian in character. The lower levels represent Kot Diji culture only.

In some of the squares in the south-eastern slope Harappan pottery continued down to layer (4). A study of this material revealed that the Harappan culture at this stage represented an early phase of that remarkable civilisation, when, though the normal Harappan forms were present, decoration in black on red remained still uncommon. The typical deep red glossy

The dish-on-stand therefore has a very long history in western Asia as it came into vogue in the Jemdet Nasr period or thereabout (Hissar II) and continued to flourish through the Early Dynastic and Agade periods; in Anatolia too it was a popular form in the early Hittite kingdom. As the dish-on-stand occurs also in Kot Diji levels, it provides us with interesting if somewhat generalised basis for comparative study.

It is not known definitely what purpose the dish-on-stand served. It appears likely that it was used both for ritual and domestic purposes.

The Khafajah specimens found in the graves may have had both connections. In modern India, the Hindu worshippers carry flowers, fruits and sweet-meats on dish-on-stands for offering purposes to gods and goddesses. The squat type is used universally for keeping fruits in modern homes.

A number of large Harappan jars with deep red glossy slip were uncovered in the upper levels, but as they were found in a very well preserved condition, they were kept '*in situ*' on the site. Among the neck-pieces brought for study a few have interesting painted designs such as the half pipal leaf, (Pl. XV, 1) which was not observed in any other Harappan site except Chanhudaro. A large jar-neck is painted with a combination of pipal tree, sun symbol and comb designs. Most of the pieces represent plain jars, some with Harappan script incised on the rim or body. Mention must be made of two small thin-textured jars with very bright red slip and finely drawn motifs of peacock and fish-scale (Pl. XVI, 4, 5).

Complete pots recovered from the Harappa levels represent mostly vases, both plain and painted, of usual shapes found in other Harappa sites. Reference has already been made to an interesting handled type which has the appearance of a 'Kamandlu' of the Hindu Sadhus. The usual forms represent pear-shaped medium-sized vases, small narrow-based vases with bulbous body and pedestal, foiled pots with open mouth, and tiny toilet-containers. Painting is restricted to line decoration and balls.

The next large number of complete pots represents straight sided beakers with flaring rims; fine small-handled cups with ring or short handle and tiny lids with conical knobs, typically Harappan in shape and other respects.

A few pottery stands are also interesting. Reference to a large bath-tub in layer (2), now kept '*in situ*', has also been made while dealing with excavations (Pl. V c).

(b) EARLY HARAPPA POTTERY

The plain and painted pottery from the upper levels, being typical Harappan in character and similar to those of other Harappa sites, though extremely well-preserved, can hardly claim any special interest. But the Harappan pottery with some apparent differences in characteristics, which has been recovered from Kot Diji levels in two squares in the outer city area, is of special interest.

Our stratigraphical studies indicated that the settlement in the outer city area ended earlier than in the citadel and the culture from layer (2) up to layer (5) on bed-rock was found to be of purely Kot Dijian character. When therefore Harappan pottery was found down to layer (4) in a few squares in this area, the material was carefully examined and revealed interesting possibilities. But since the number of objects studied and the area represent were alike limited, conclusions can only be provisional.

It seems that the Harappa culture at this stage, as shown by some of the painted specimens, represents the early phases of that civilisation, when, though the normal Harappan forms of pottery were developed, decoration remained still uncommon. No complex designs such as the 'intersecting' circles, plain-forms or 'pipal leaf' motif of the typical matured Harappan phases are found. In fact, the only recognisable painted designs include the representation of an antelope with hatched body, a crudely painted peacock, the 'fish-scale' pattern and the linked or suspended balls. This last design occurs on vessels at the basal junction of the slipped and unslipped portion. The typical deep red glossy slip had not yet fully developed; it is fugitive and is easily washed off.

On two potsherds appear antelopes painted in black on red slip. The beasts are crudely drawn; their long horns terminate in tufts; the tails end with a plume and the body is hatched. At their back stands a peacock.

Another painted potsherds discovered in these levels indicate the beginning of bird and animal designs on Harappan ware. The painting in question looks like the embryonic form of the well-known peacock design, many of which have been recovered painted on bright red-slipped pottery from upper parts of the site. Here the peacock has the Harappan features with elongated body and long tail, but the technique of painting is primitive and is executed in freehand style without the firm and sure lines and intricate detail which later developed into assured conventional motifs.

The plain and painted pottery from this area suggests therefore that it represents an early phase of the Harappa civilisation. This early period pottery is not available from the water-logged lower levels at Mohenjodaro or from other excavated sites of the Harappa culture. Fortunately at Kot Diji that problem does not exist as excavations outside the defensive wall have clearly shown that the early Harappan settlement was built over the remains of the authors of the new type of pottery, the Kot Dijians, who originally settled on the bed-rock.

It seems probable that this early Harappa phase is contemporary with the late Kot Diji phase represented in the adjoining trenches. In this late Kot Diji phase the continuous loops had already developed into fish-scale patterns, and new and complex motifs were introduced which seem to have had some influence on the Harappan painted designs. This contact, however, does not appear to have been more than a temporary one on a small scale—probably representing a small settlement of alien artisans—as it apparently did not affect the main current of Kot Diji life and culture. On the other hand it may have exerted some influence on the development of Harappan ceramic art by the introduction into it of some derived Kot Dijian elements.

(c) KOT DIJI WARE

A study of the new element, the Kot Diji pottery unearthed from layers (4) to (16), has revealed a number of stages of development. In the early stages, the pottery is recognizable by almost neckless and rimless forms of thin texture, characterised by fugitive bands in red, sepia and black round the neck. In the later stages, the neck is found more developed and pronounced, and, what is more interesting, some painted designs in black and white begin to appear. The typical shape is squat and globular with a wide mouth.

In the beginning, the pottery was singularly plain except for the characteristic bands at the neck. During the first season of our work, multiple loops and wavy lines were noted as the only designs known to the Kot Dijian pottery. But during the second season further stages of this design were observed, developing gradually into the well-known 'fish-scale' pattern in the late Kot Diji levels (Pl. XVII a. Fig. 16). The highly stylized and conventional fish-scale pattern of the Harappans may have had its origin in this obscure period. Some broad hatched or solid geometric patterns also came to light, apparently the prototype of some of the characteristic

designs of the Harappan pottery, which may thus similarly owe their origin to the late Kot Dijians.

The Kot Dijian pottery on the whole has a very fine thin body. It is wheel-made; its clay is well-levigated, its paste and ground varies from pinkish to red colour. The bands are executed in red, brown, sepia and a warm black over a cream slip. Their width varies from one to three inches. Below the bands are either thin black horizontal lines or single or multiple wavy lines.

The principal forms include dishes-on-stand; open-mouthed globular jars with short everted out-turned or beaded rims, flatbased; straight-walled and wide-mouthed cylindrical vases; elliptical jars with prominent flange or external ledge for lids, and bowls and flat dishes. Some of these flat dishes are of a thin grey fabric. A number of these delicate plates and bowls decorated with brown or dark brown wavy lines have been unearthed from the early Kot Dijī levels. The straight-sided cylindrical vases with black lines or dark brown neck-bands are notable specimens (Pl. XXVII a). A small delicate vase with violet neckband and two balls below it is an extremely beautiful specimen (Fig. 14, No. 18).

The dish-on-stand is fairly common in Kot Dijī levels, particularly in the late levels of that culture. But only one form, that is, with medium-long plain or painted stem has been observed. It is wheel-turned. The dish and the stem of this type were prepared separately and joined together before firing. In comparison with the Harappan specimens, the Kot Dijī dish-on-stand is smaller, finer and more delicate; the decoration is restricted to simple wavy or horizontal lines, multiple loops, and the characteristic broad bands, covering a small part of the stem only. Crowded motifs are totally absent. No decoration on the dish has so far been observed.

The contrast in texture, form and decoration between the normal Harappan pottery and the Kot Dijian ware is so well marked as to indicate a basic difference of ceramic industry. The Kot Dijī culture was itself quite mature and well-developed in its own style. Its most characteristic and distinguishing feature appears to me to lie in the beauty and delicacy of its form and also in the economy and discipline of its decoration which was never allowed either to become overcrowded or merely conventional in style. Even the simple bands and lines appear to have been painted with the care and imaginative calculation of an artist. The result is extremely effective.

In the later stages this discipline and restriction appears to have been discarded to some extent in an experiment with new decorative motifs. But these were restricted to geometric patterns only. Except the horned deity, already referred to, no animal, plant or floral design has been observed. In addition to the usual wide bands in different shades, the new decorative elements include simple thin horizontal lines combined with single or multiple loops and wavy lines. The multiple loops seem to have developed in the very last stages of this culture into the well-known 'fish-scale' design. A complete vase with this design has been recovered from layer (3) in the outer city area (Pl. XVII a).

Similar stages of development are traceable in two other designs, the intersecting circles and balls—not yet lined—which also appear to have influenced the development of Harappan painted patterns. (Pls. XVIII & XX; Fig. 17 & 18).

It has been possible to prepare a typological series on the basis of the neck and rim forms of the two large groups of Kot Diji ware recovered from the excavations—(i) jars, mostly squat and globular, but a few also of elliptical shape; and (ii) bowls (Pls. XVII-XXV; Fig. 16-20). These show the same development from simple to developed forms, from almost neckless and rimless shapes to developed and prominent neck and rims.

Another class of Kot Diji pottery which showed an interesting difference from the Harappa prototype is the jar lid with a fine solid or ring knob on top and thick circular black lines or bands round the knob. Later painted specimens show a variant of intersecting-circle design as well as other broad geometric patterns as found on potsherds from Kot Diji levels (Pl. LV, 1-3; Fig. 21).

The affinities of the Kot Diji ware appear to exist to some extent in the pre-Harappan levels below the defences at Harappa which was excavated by Sir Mortimer Wheeler in 1946. This pottery has since been traced in the early levels at Amri, and also at Bhoot in Bahawalpur Division.

(d) KOT DIJIAN VERSUS HARAPPA CULTURE POTTERY

A this stage it is difficult to come to any definite conclusion about the period when Kot Diji was first occupied, nor do we know for how long the sequence of occupations lasted. But there is no doubt that the

occupation of the site before the arrival of Harappans must have covered a considerable span of time, as is attested by the 12 to 15 feet high defensive wall and the accumulated depth of buildings which occur in 17 feet of debris.

Excavations have clearly indicated evidence of settled conditions when the Kot Dijians manufactured well-finished pottery and built their houses in *pise* and mud-brick on stone foundations. There is no proof as to the region from which the Kot Dijians arrived in the Indus Valley. It is, however, certain that their ceramic product was well distributed since, as already noted, some of its forms with straight or everted rim and with the characteristic colour bands at the neck were found at Harappa in 1946 at a depth of about 55 feet in layer (26) underneath the mud-brick defensive wall. Again some of its shapes seem to correspond with certain pottery types of the Amri culture. But this much is certain, that Kot Diji pottery has little affinity with the normal Harappa ware. As mentioned elsewhere, stratification has confirmed that the Harappan pottery occurred from layer (1A) to (3); in layer (3A) this pottery has been found intermingled with the Kot Dijian ware (Pl. LXVIII) and layers (4) to (16) have revealed only the latter type of pottery.

This is a very important and significant feature which clearly indicated that the thick black-on-red ware of the Harappa culture did not originate in the thin pinkish Kot Diji ware. Except for a few forms and simple decorative motifs, which have already been mentioned, there is hardly any important form or pattern common to the pottery of both Harappans and Kot Dijians. The strongest point of contrast is the technical difference. The Kot Dijian ware is very light and thin, the Harappan black-on-red is thick and heavy.

(e) KOT DIJIAN FORERUNNERS OF HARAPPANS

Further studies must be made before any definite conclusion can be reached about the borrowing or retention of some of the pottery forms and decorative elements of the Kot Dijians by the Harappans.

But the indication is strong that the authors of the new type of pottery were the forerunners of the Harappans in many respects. Though different in form and technique, their ceramic products are in no way less artistic than the sophisticated black-on-red pottery of the Harappans. Well-known pottery forms such as the dishes-on-stand, shallow wide plates and small

flared-mouth beakers, which are very common, bangles, beads, cakes and balls are also there. The stone implements used by the Kot Dijians show great merit; these include cores, flakes, spearheads, arrowheads, micro knife blades and scrapers. The stone arrowheads, it may be observed, are not a normal Harappan type, and help further to differentiate the two-cultures.

(f) SELECTED POTTERY

Fig. 11.

1. KD 2037, Square BIII/8, Layer (2). Fragment of an offering-stand, of red ware painted on the inner side with hatched leaf and floral designs and loops on the rim in black on deep red slip.
2. KD 3873, Square BIII/12, Layer (1B). Fragment of an offering-stand, of red ware, hatched circular and leaf designs painted in black-on-red.
3. KD 3874, Square BIII 12, Layer (1B). Dish of an offering-stand, of red ware, treated with dark red slip on the outer surface and black lines painted on the splayed-out rim.
4. KD 246, Square BIII/7, Layer (1A). Pedestal-footed squat offering-stand, of red ware with nail-head rim, treated with rough slip on the inner side and having incised circular designs in the middle.
5. KD 328, Square BIII/6, Layer (1A). A hand-made shallow bowl of red ware, devoid of any slip or wash.
6. KD 678, Square BIII/8, Layer (1). A ledged-neck of a jar, of dull-red ware and painted with 'pipal' leaf design in black on bright red slip.
7. KD 209, Square BIII/2, Layer (2). A small hand-made cup of pale-red ware with flat base and incurved rim, provided with a vertical-sided perforated handle.
8. KD 3893, Square BIII/11, Layer (2). Stem of an offering-stand of light red ware and the surface treated with bright red slip.
9. KD 1512, Square AIII/23, Layer (2A). A miniature vase of reddish ware with flat base and flaring rim, red band painted on the outer surface which is carried over the rim.
10. KD 1350, Square AIII/14, Layer (1). Cylindrical vase of pale-red ware with flat base and flaring rim and having rough outer surface.
11. KD 871, Square AIII 24, Layer (2). A globular vessel of red ware with disc base and out-curved rim. It is treated with pale wash externally.
12. KD 1255, Square AIII/24, Layer (2A). Miniature vase painted on the outer surface with red.
13. KD 1254, Square AIII/24, Layer (2A). A miniature vase similar of No. 12 above, painted on the outer surface with red parallel lines (shown in the drawing with solid.)

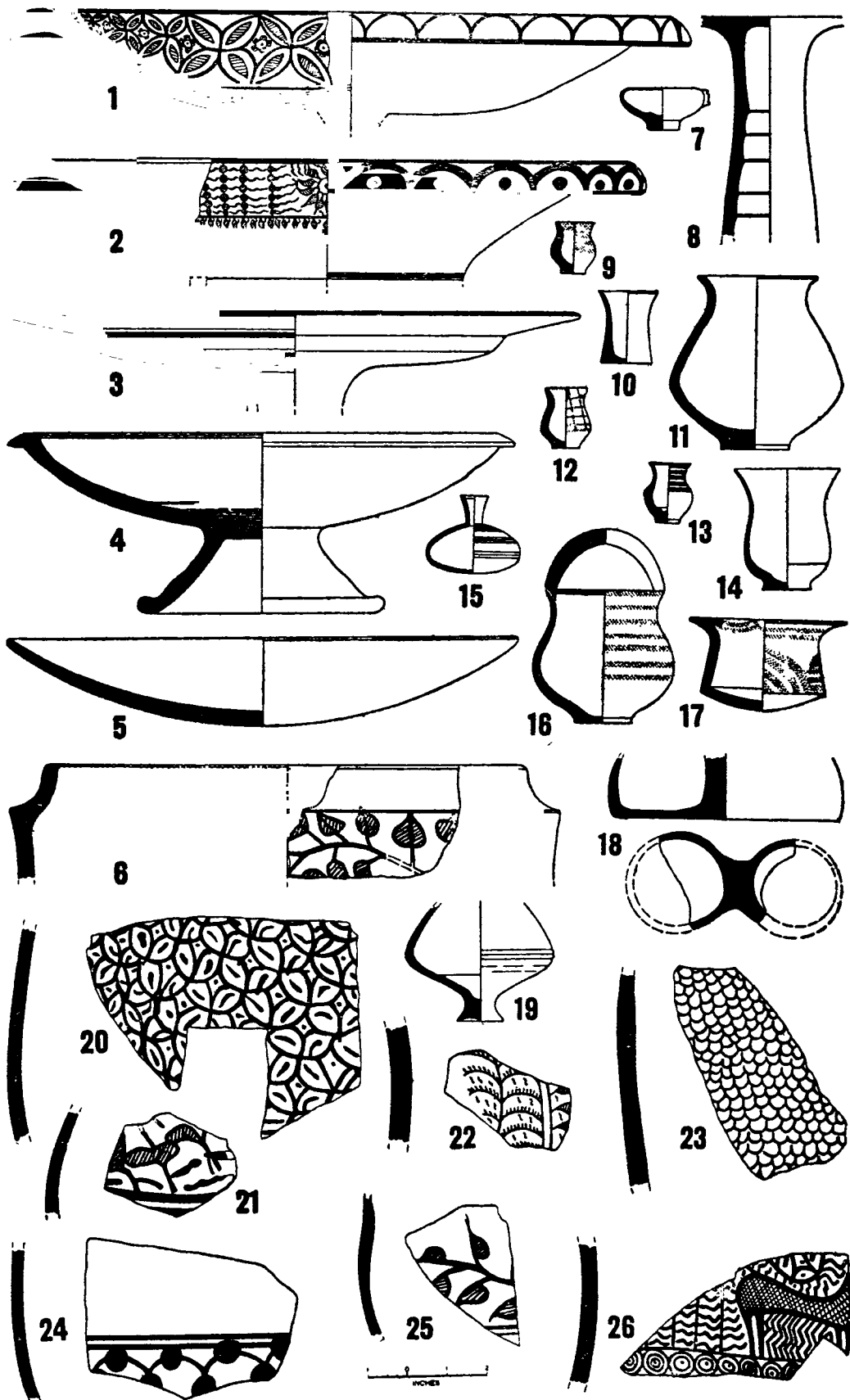
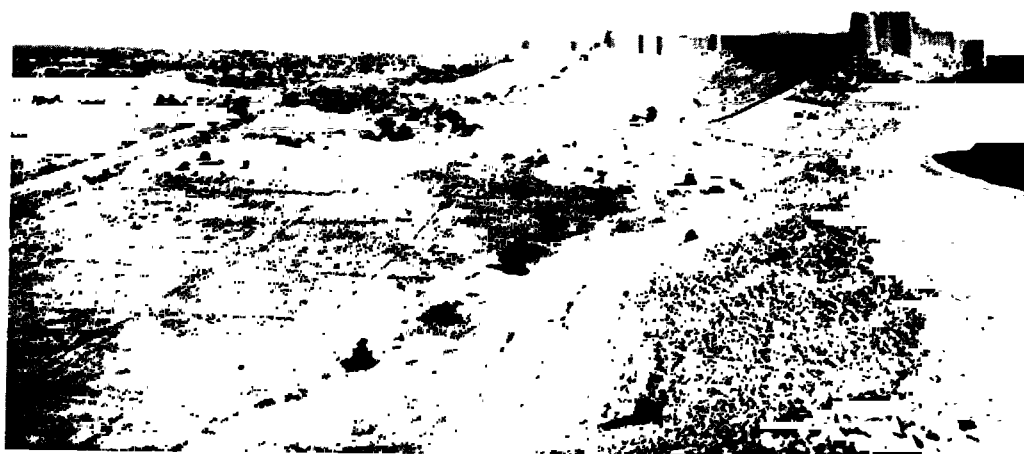


Fig 11. Neck pieces, painted sherds and plain beakers and vases

14. KD 1992, Square BIII/2, Layer (2). A vase of red ware with flat-disc-base and flaring rim. It is of fine fabric and treated externally with bright red slip.
15. KD 1901, Square AIV/21, Layer (4A). A wide-shouldered small vase with convex base and long flaring neck. It is of red ware and painted on the exterior surface with black-on-red.
16. KD 1240, Square BIII/2, Layer (2). A handled-vase of light red ware, painted with red parallel lines on the exterior surface.
17. KD 134, Square BIII/3, Layer (2). A cup of light red ware with carinated convex base and flared rim. It is painted with concentric semi-circle design in red on the outer surface and double-looped design on the inner side of the rim over pale-reddish wash.
18. KD 1567, Square AIII/9, Layer (1). A double-cup made together of reddish-ware, cups having incurved profile and flat base.
19. KD 603, Square BIII/6, Layer (2). Pedestal-footed vase with carinated body and incurved upper profile. It is of fine fabric, made of well levigated clay and treated externally with bright red slip.
20. KD 7 89, Square BIII/11, Layer (1). Fragment of a deep-red ware, painted with intersecting circular design in black on deep red slip.
21. KD 3709, Square BIII/12, Layer (1B). Fragment of a red ware well-fired, 'pipal'-leaf design painted with black on deep red slip.
22. KD 2294, Square BIII/12, Layer (1). Fragment of red ware depicting tree and hatched leaf design in black-on-red.
23. KD 3885, Square BIII/4, Layer (2). Fragment of a red ware depicting fish-scale design painted in black on deep red slip.
24. KD 2232, Square BIII/8, Layer (1). Fragment of a red ware, depicting roundals connected with semi-circular design bordered by two black liles.
25. KD 2272, Square BIII/8, Layer (2). Fragment of a red ware depicting 'pipal'-leaf in black-on-red.
26. KD 2295, Square BIII/12, Layer (1). A piece of dull-red ware with animal, circular and zig zag designs painted in black on deep red slip.

Fig. 12.

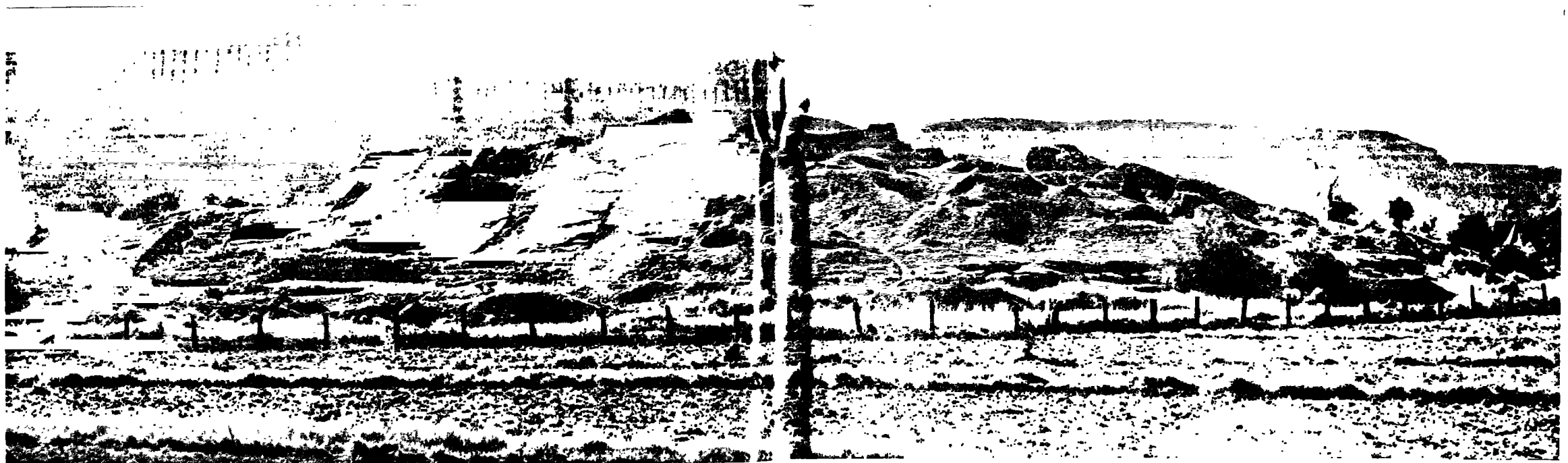
1. KD 3797, Square BVI/6, Layer (2). Carinated neck of a large vessel with out-turned rim inscribed with Indus script, of red ware and treated with red slip on the outer surface.
2. KD 3782, Square BIII/12, Layer (1C). Similar to No. 1 above but surface treated with dark sepia slip, and Indus script inscribed on the rim.
3. KD 3881, Square BIII/12, Layer (1C). Fragment of a large jar of dull-red ware, with externally thickened out-turned inscribed rim.



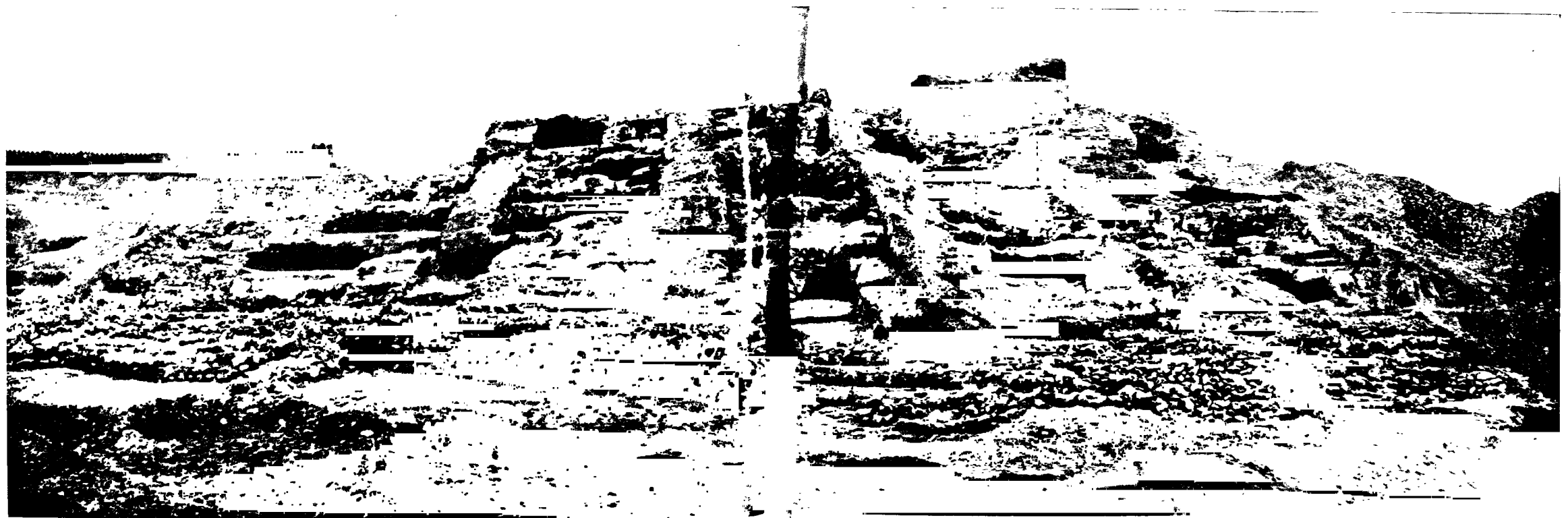
(a) Diji Fort on right, Archaeological site on left and Karachi-Peshawar Highway between them



(b) The site View from South-East



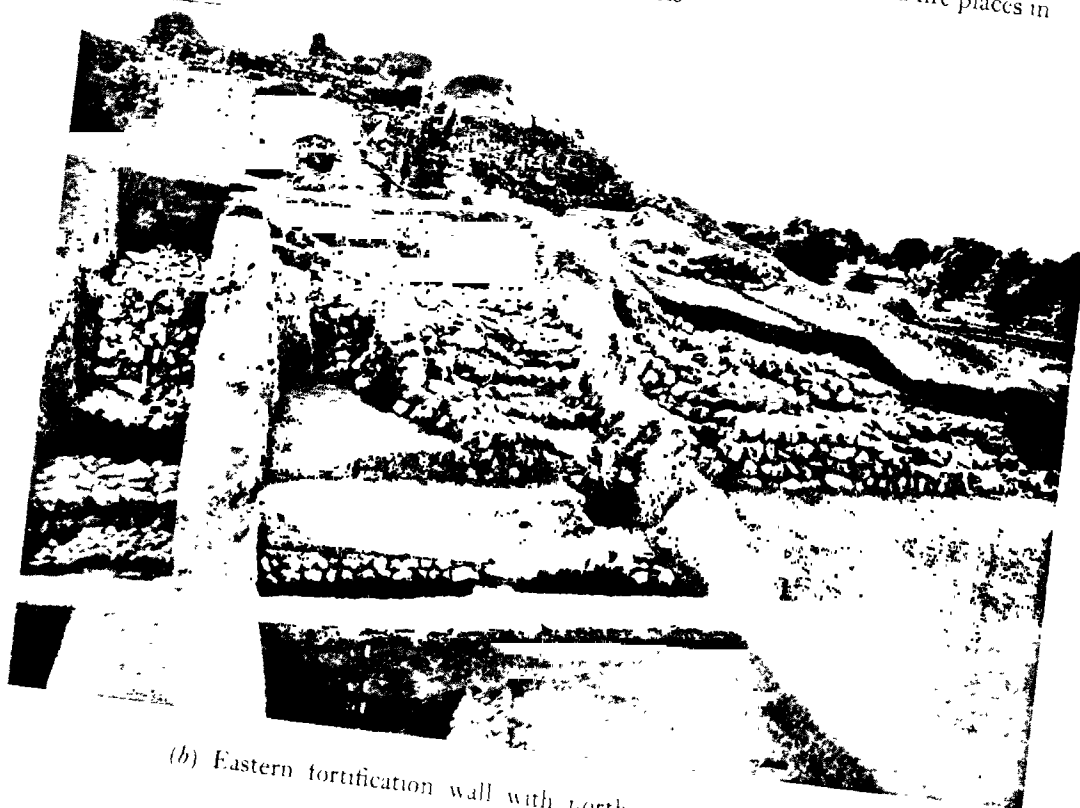
(a) Excavation and Diji Fort



(b) Exposed building remains of the citadel area. The Defence wall is visible in the foreground



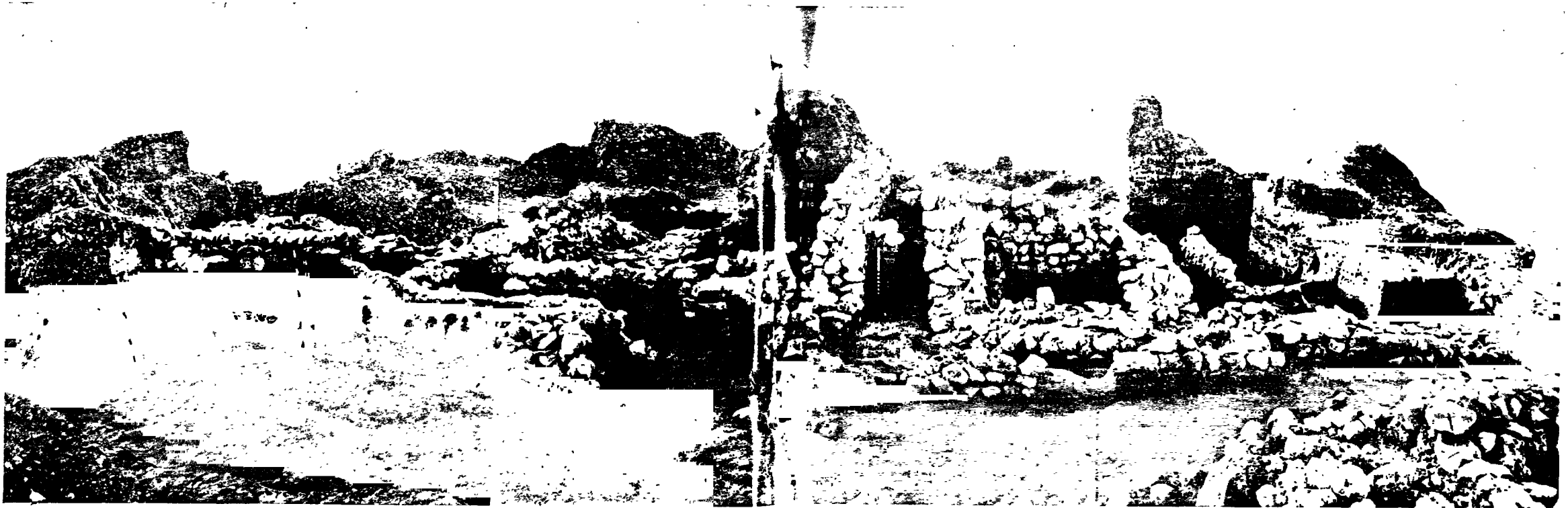
(a) Citadel area showing excavated remains with floor and brick lined fire places in different levels



(b) Eastern fortification wall with northern corner bastions



Section showing break in cultural sequence. All levels above letter 'H' belong to Harappa and below 'K' to Kot Diji period



(a) Harappa culture level. Remains with stone structures, lanes and pottery in situ. Citadel Area



(b) Harappa culture level. Specimen of reed mat impression on mud which evidently formed part of the roof



(c) Bath tub and storage jar 'in situ' in Harappa culture level



(a). The citadel fortifications showing stone foundations and mud-brick superstructures



(b). Well preserved mud brick lined kiln, Kot Diji levels. Citadel Area



Inner face of defensive wall and the associated layers



(a) Floors and brick lined ovens in layers (6) and (8). Citadel Area



(b) Storage jar of Kot Dijian type on floor of layer (12). Citadel Area



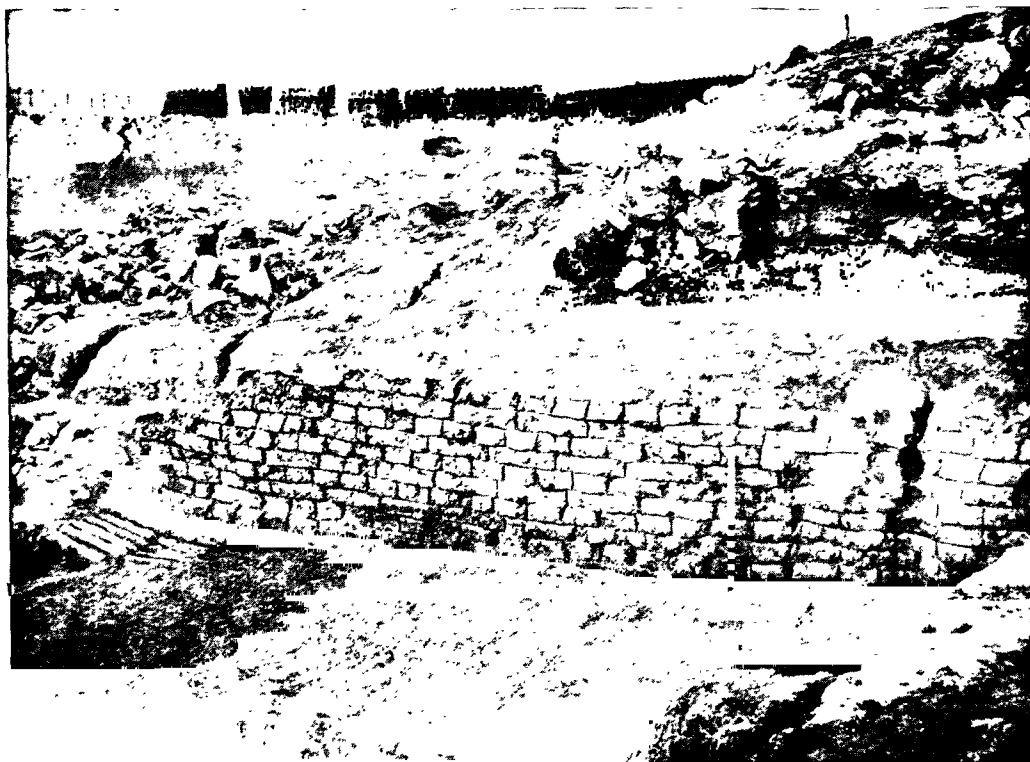
(c) Occupational remains in layers (8) to (16) up to bed-rock. Citadel Area



Closer view of deep diggings from layers (8) to (16). Square B IV,6. Citadel Area



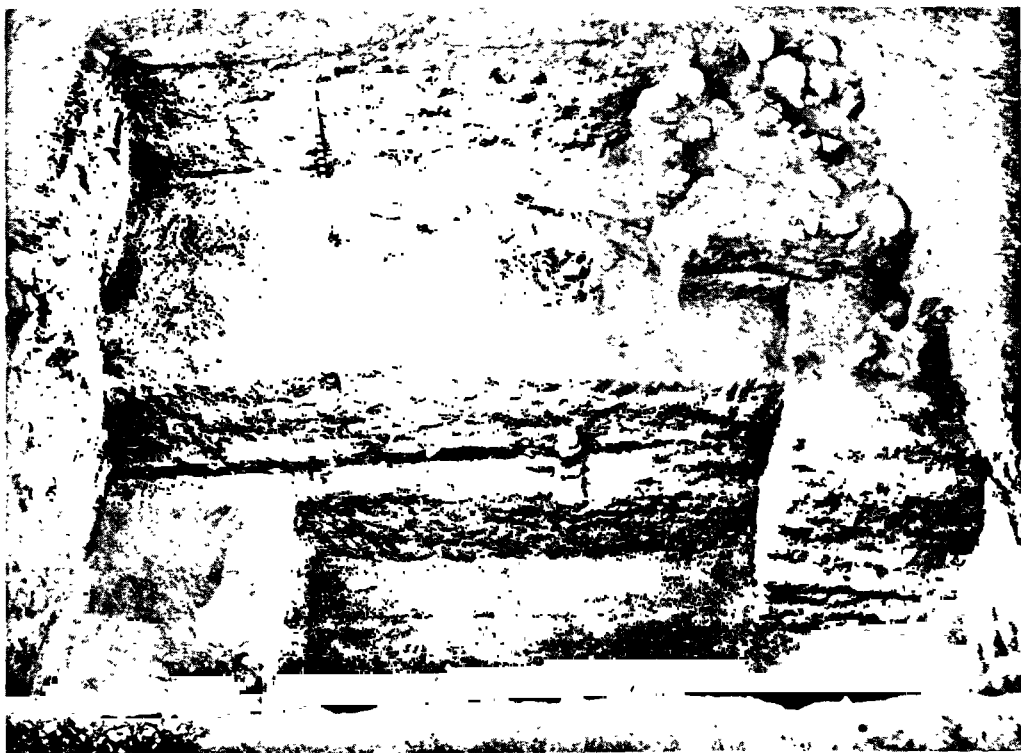
(a) Stone structural remains in layer (2). A lane between blocks of houses is visible in the further corner. Citadel Area



(b) Southern wall of a spacious mud brick building, Kot Diji levels. Citadel Area



(a) Excavations on the fortified citadel in the background and the lower city in the foreground



(b) Kot Diji occupation levels. Layer (3) and (3A) yielded two Kot Diji jars: one painted with horned deity and other with fish scales. Outer City Area



Stone structures in layer (2) and (5), fire place in layer (4) and bed rock in the foreground.
Large kiln in the background is in layer (2)



(a) Excavated remains of outer city from layers (2) to (5) on bed rock. Pottery specimens on floor of layer (3) belong to an early phase of Harappa culture



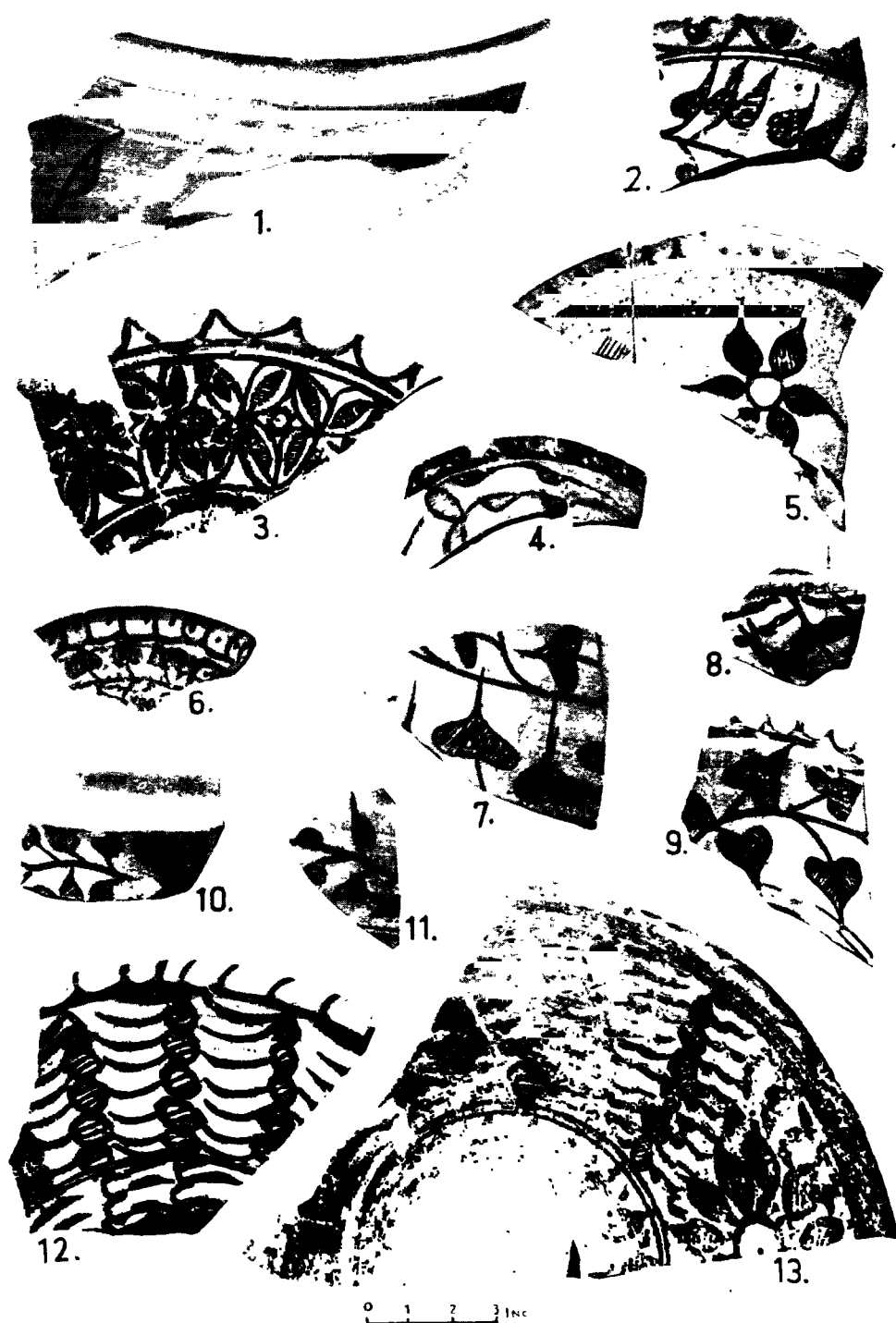
(b) Stone blocks used to check floods from a nearby stream. Outer City Area



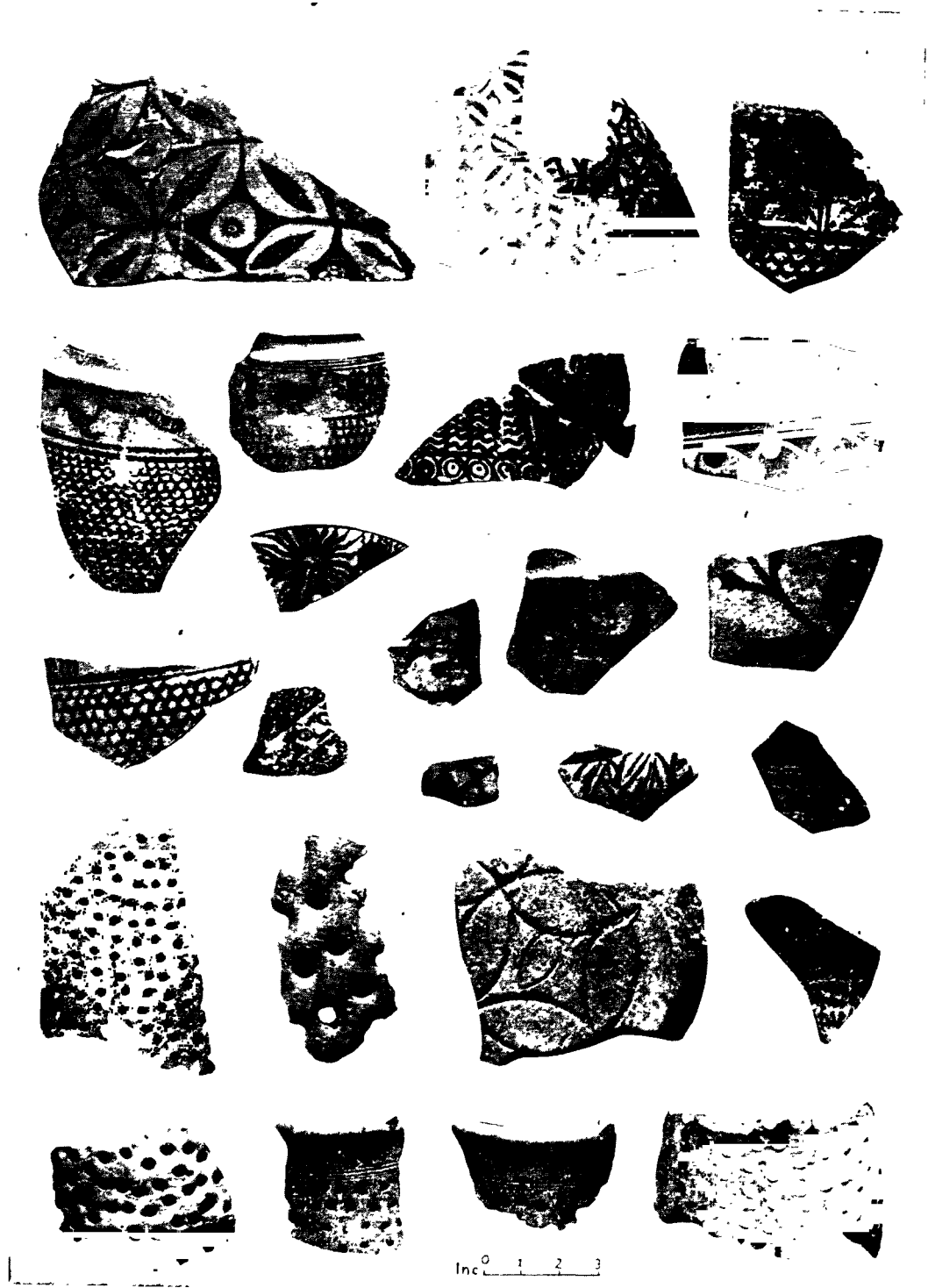
(a) Painted potsherd. Harappa culture



(b) Painted, incised and plain pottery. Harappa culture



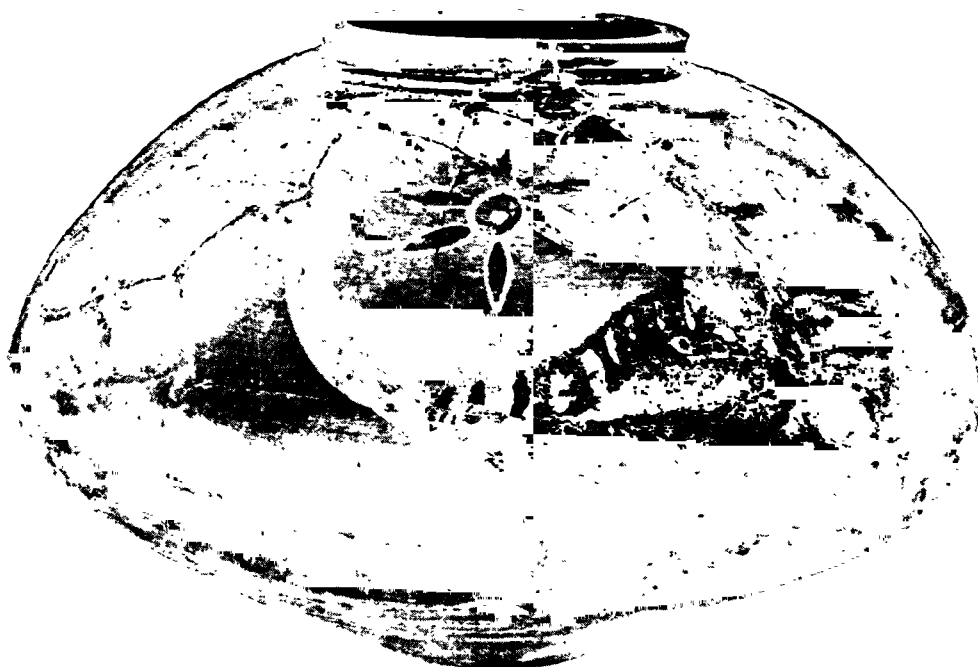
Painted pottery. Harappa culture



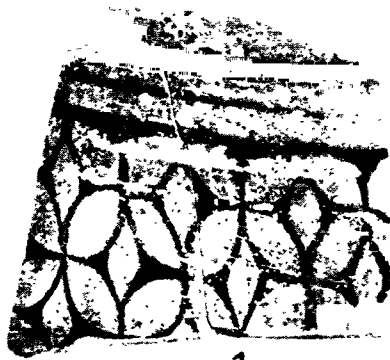
Painted, perforated and incised pottery. Harappa culture



(a) Jar painted with fish scale patterns. Kot Diji culture



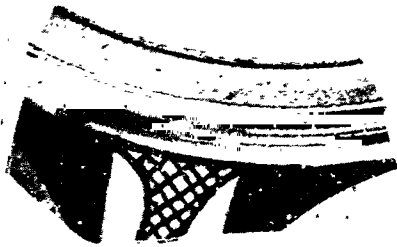
(b) Water pitcher painted with a horned deity. Kot Diji level



1.



2.



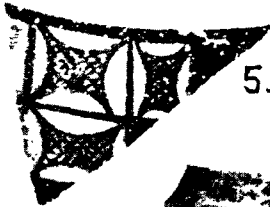
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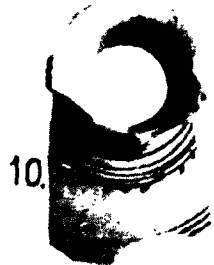
7.



8.



9.



10.



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12.

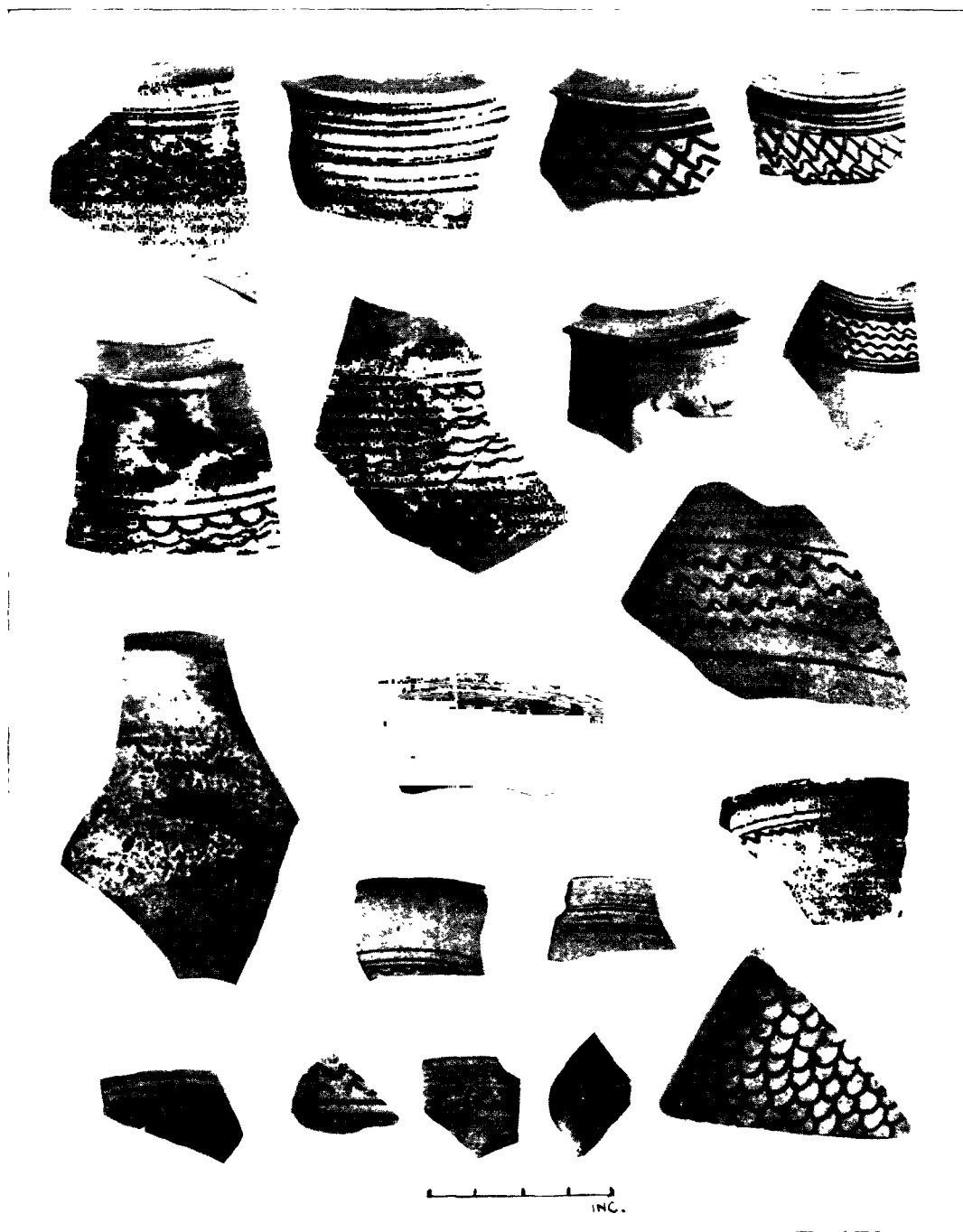


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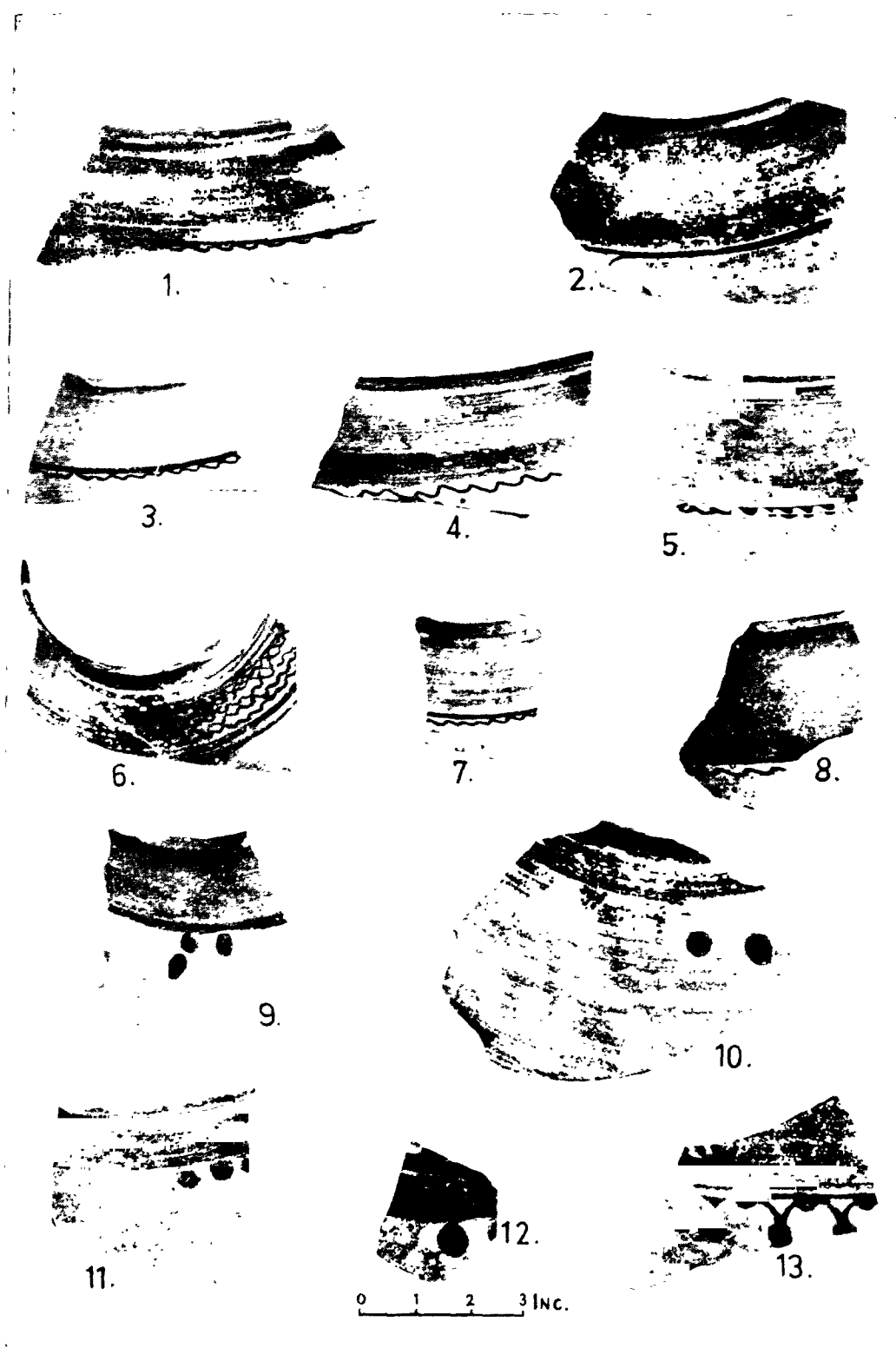


14.

0 1 2 3 Inc.



Painted pottery. Multiple loops. Kot Diji culture



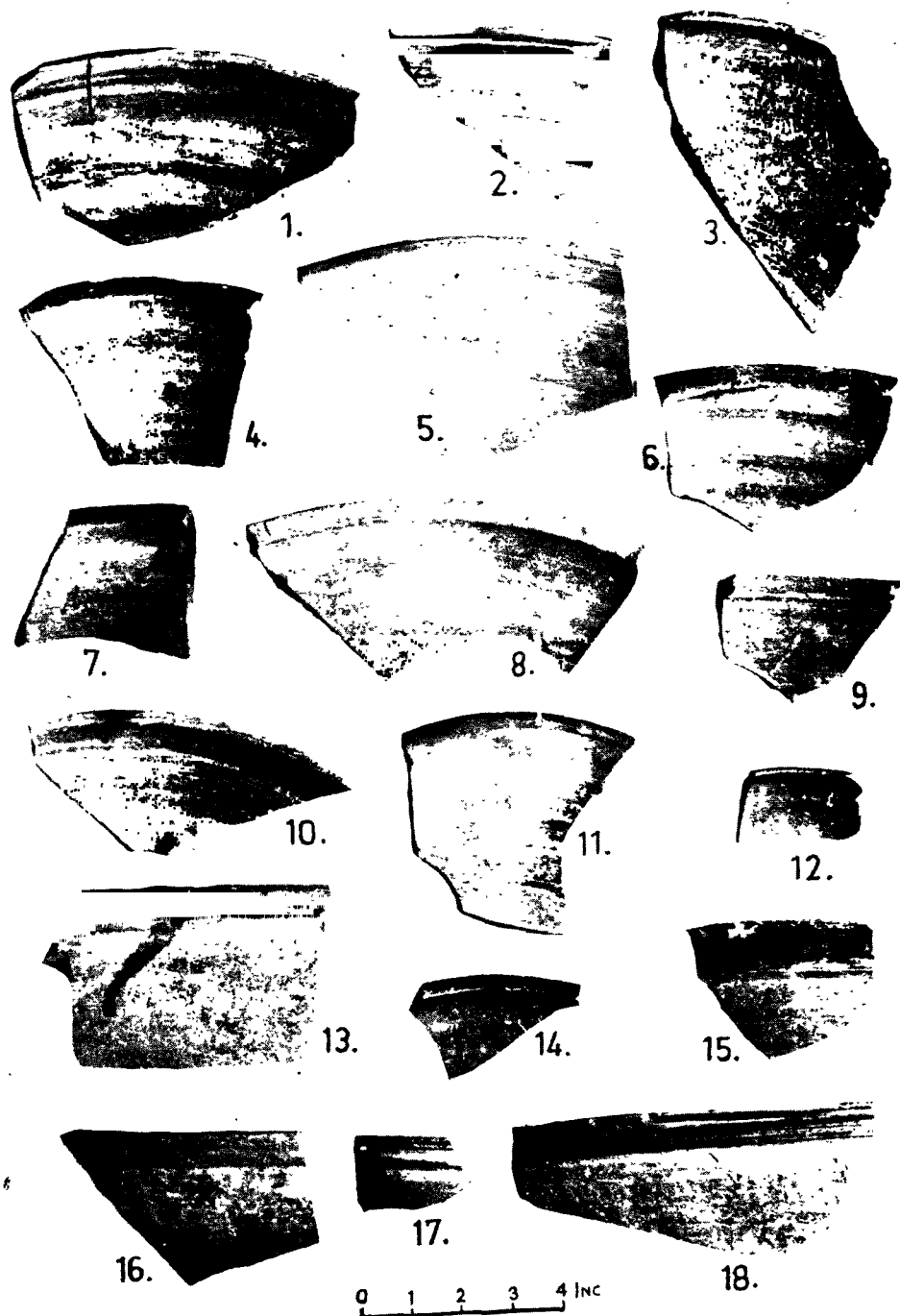
Painted pottery. Loops and balls. Kot Diji culture



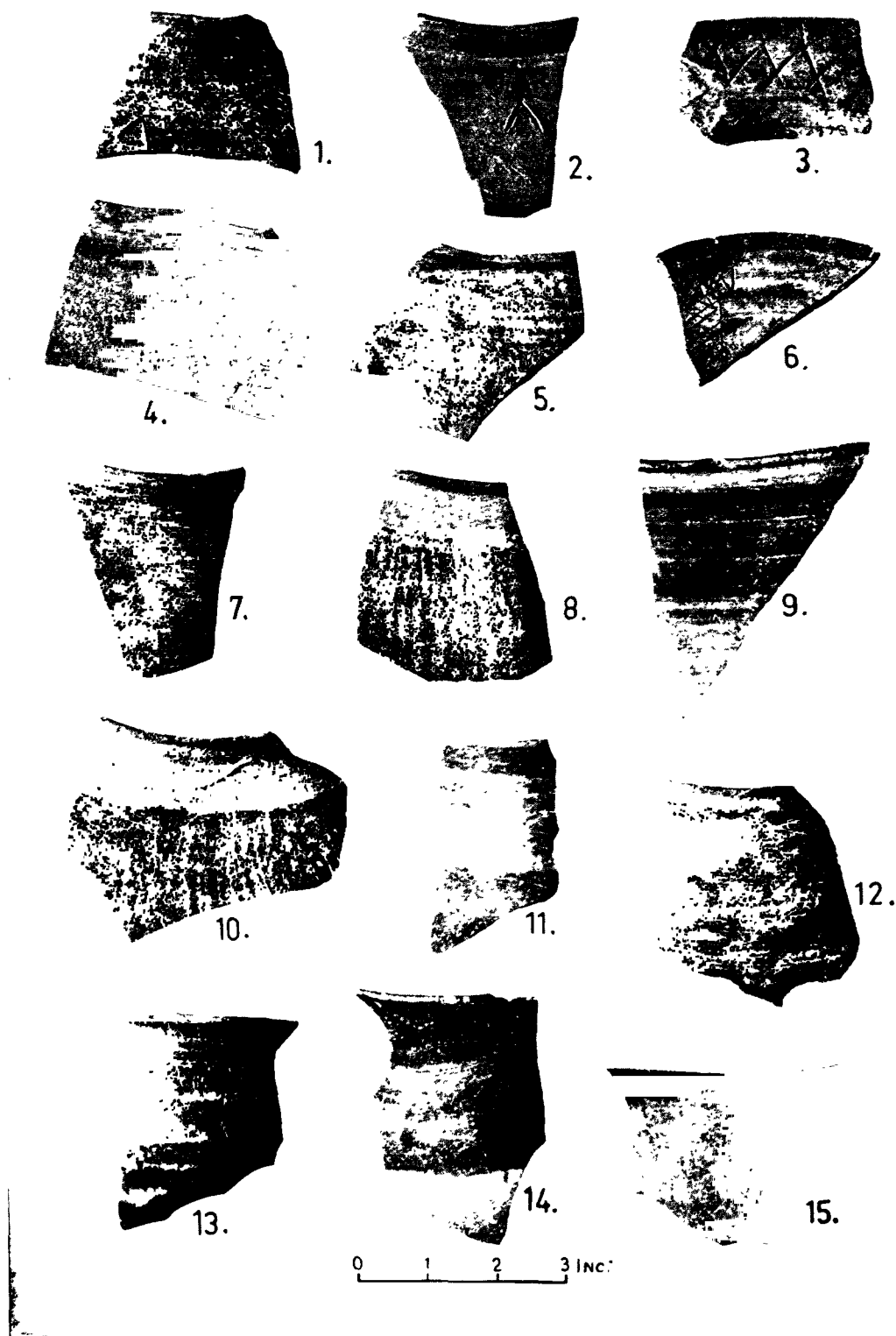
Painted pottery with broad neck bands in dark red, brown or sepia. Kot Diji culture



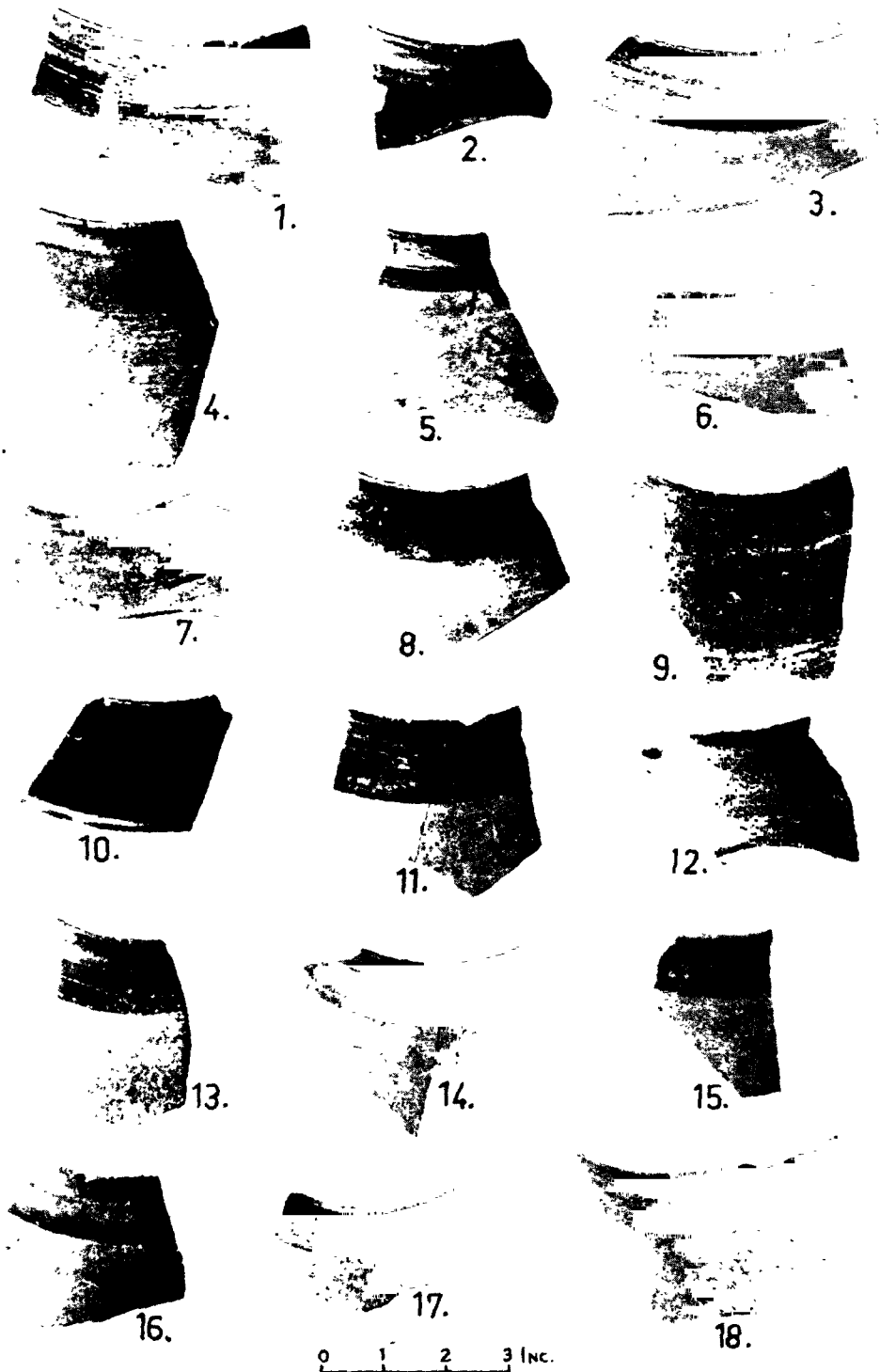
Painted pottery with beaded or everted rims and broad neck bands in dark red, brown or sepia. Kot Diji culture



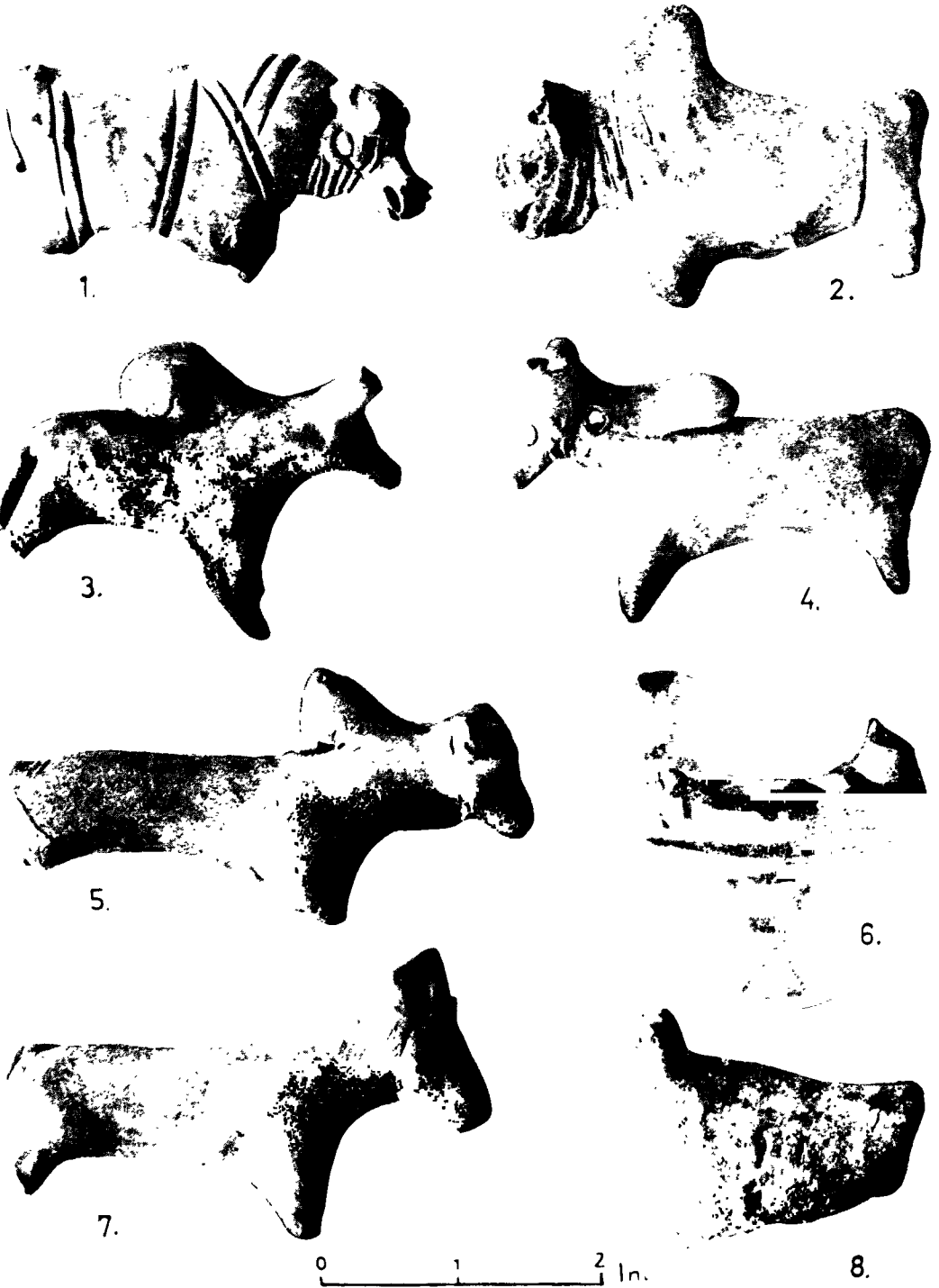
Painted pottery with slightly everted rims and broad neck bands. Kot Diji culture



Incised, painted and plain pottery: rimless or with slightly everted rims. Kot Diji culture



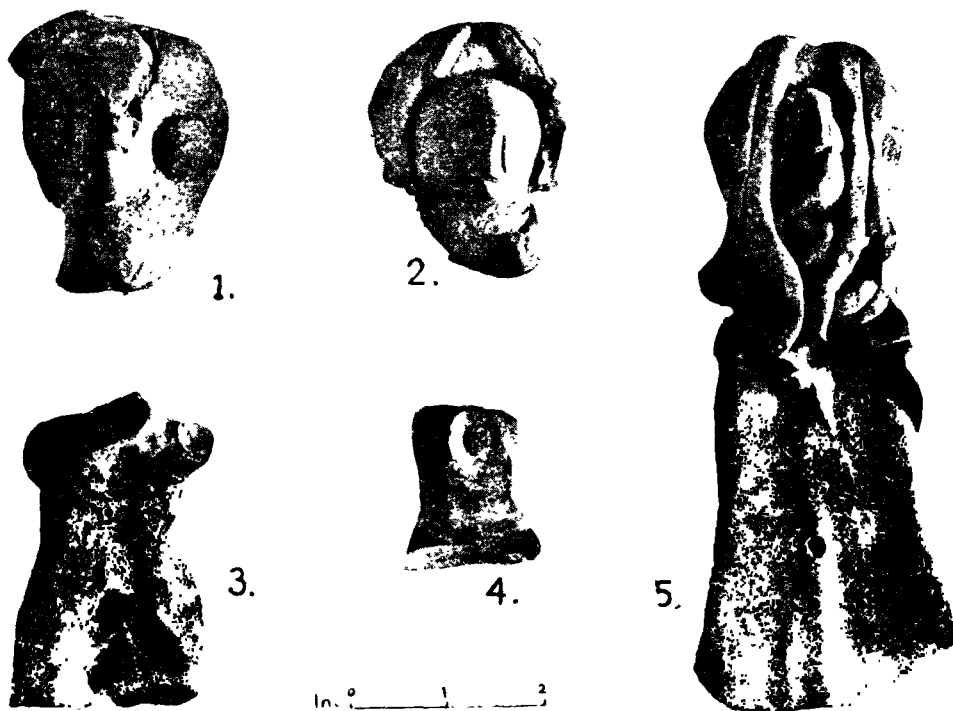
Bowls and dishes. Kot Diji culture



Terracotta animals. Harappa culture



(a) Cylindrical vases. Kot Diji culture



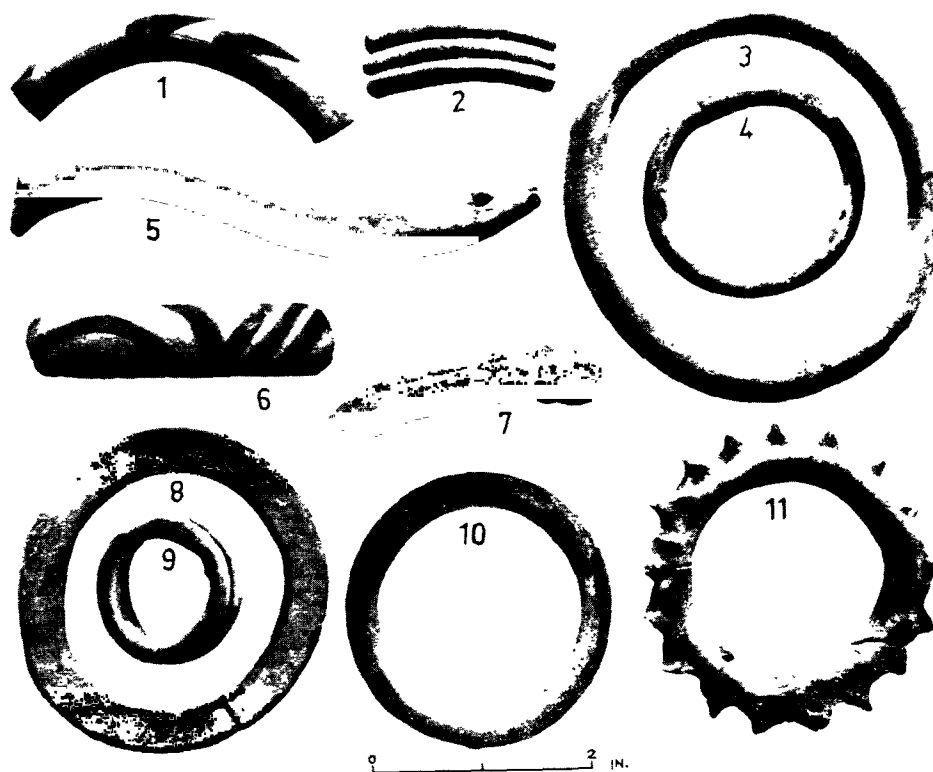
(b) Terracotta figurines. Harappa culture



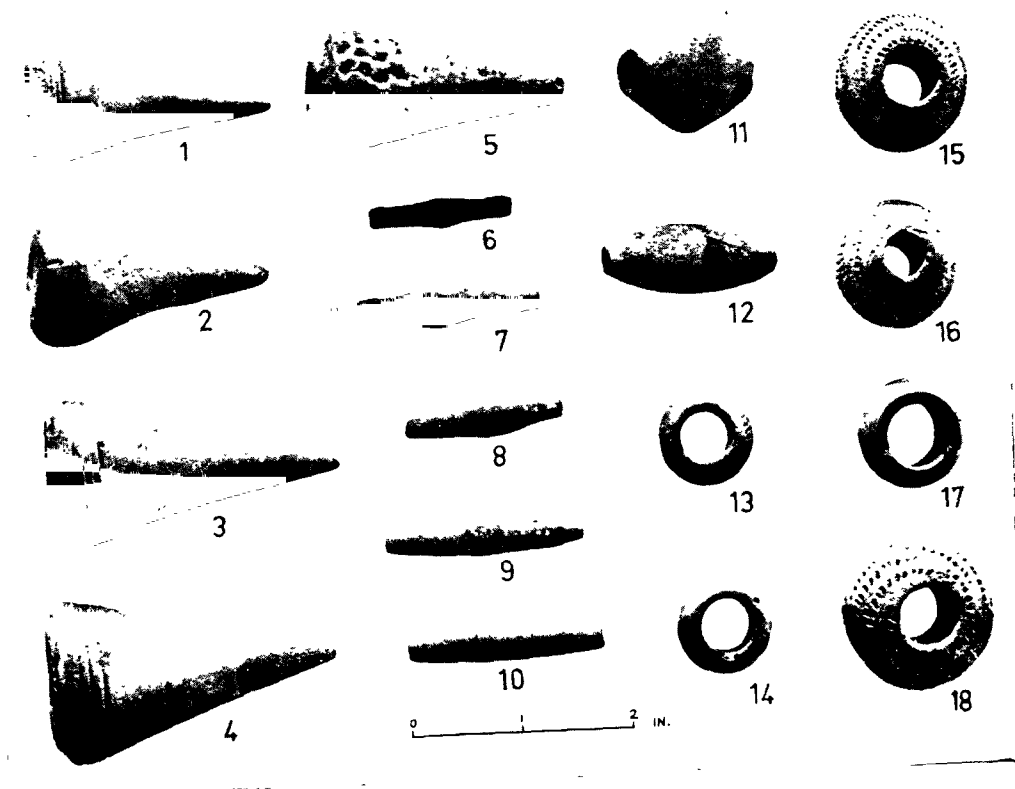
(a) Terracotta bull. Kot Diji culture



(b) Terracotta toy cart



(a) Terracotta bangles and armlets



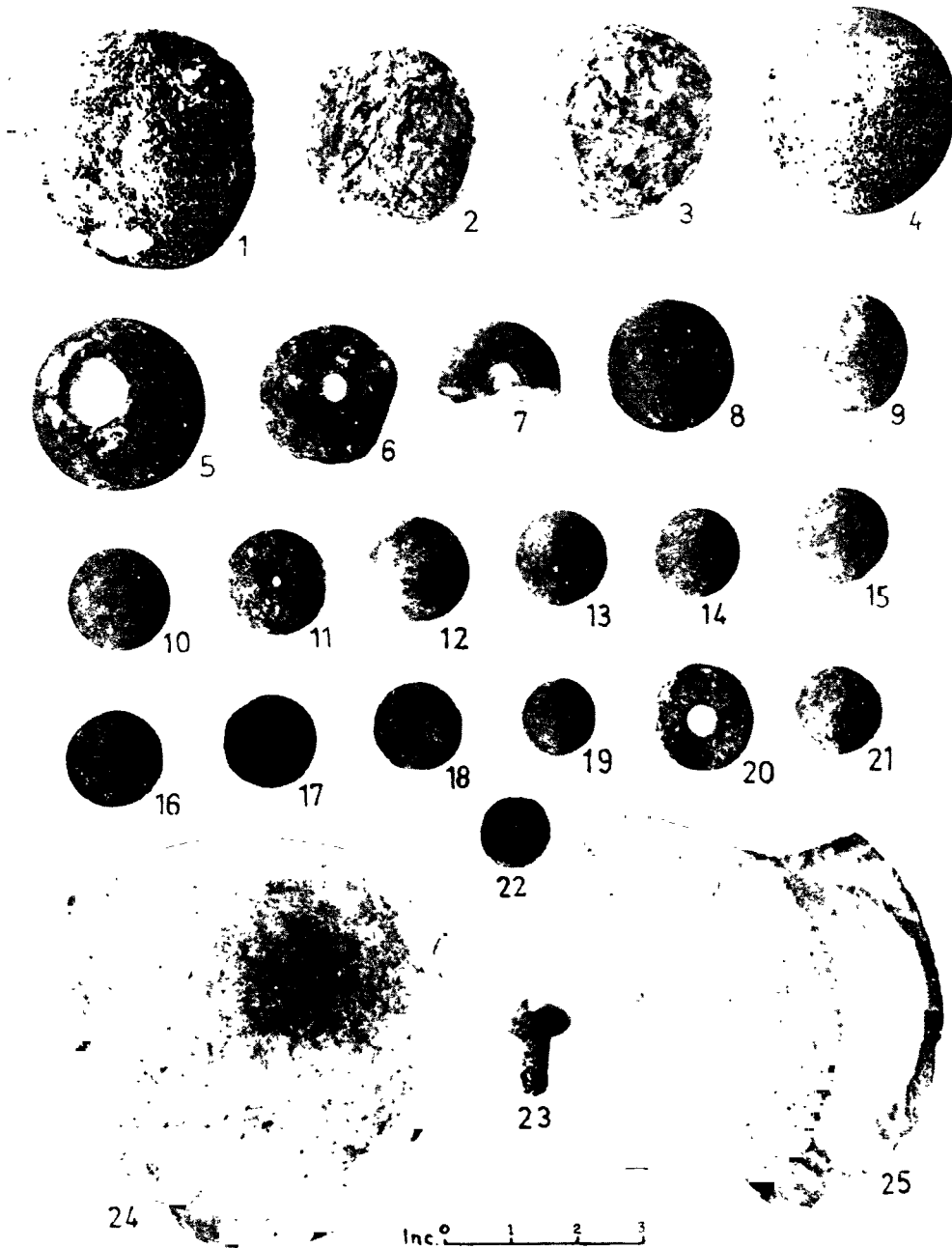
(b) Terracotta beads and cones



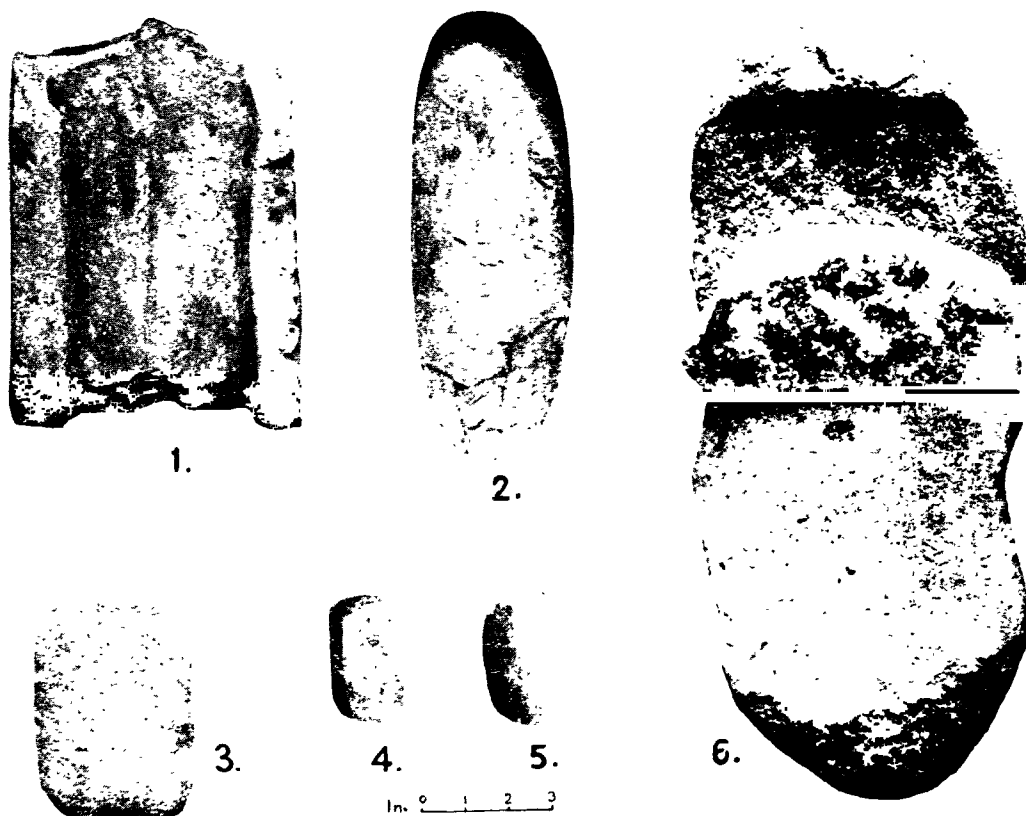
(a). Terracotta toy cart and wheels



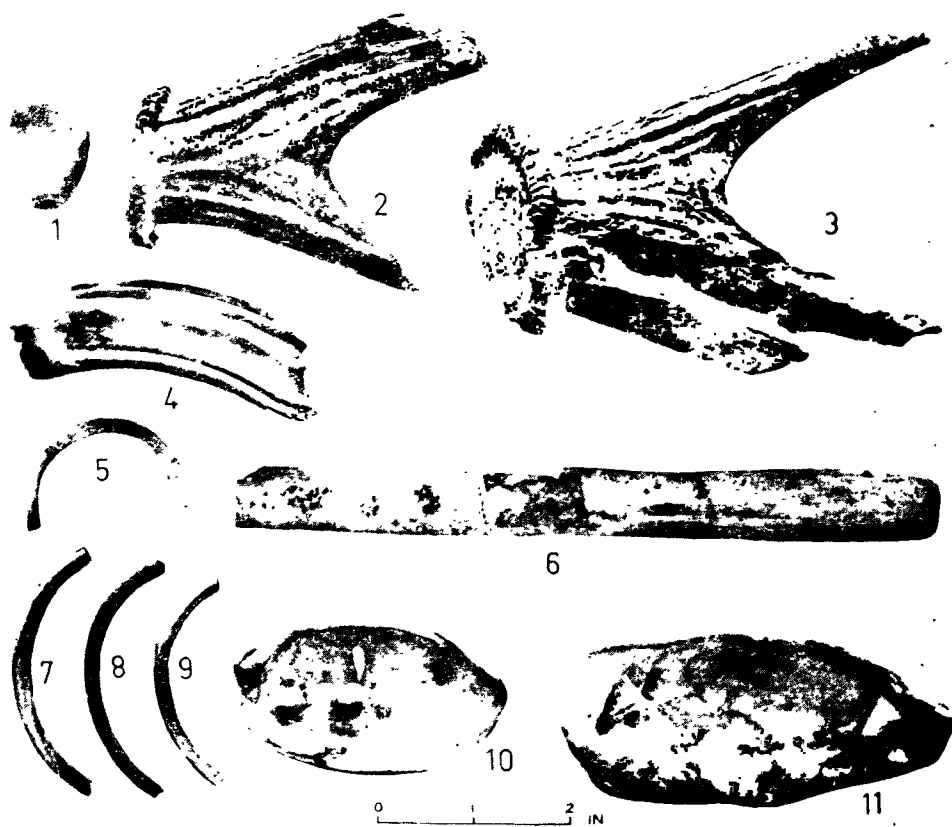
(b). Terracotta calces, balls and net sinkers. Harappa and Kot Diji cultures



Stone objects. Harappa and Kot Diji cultures



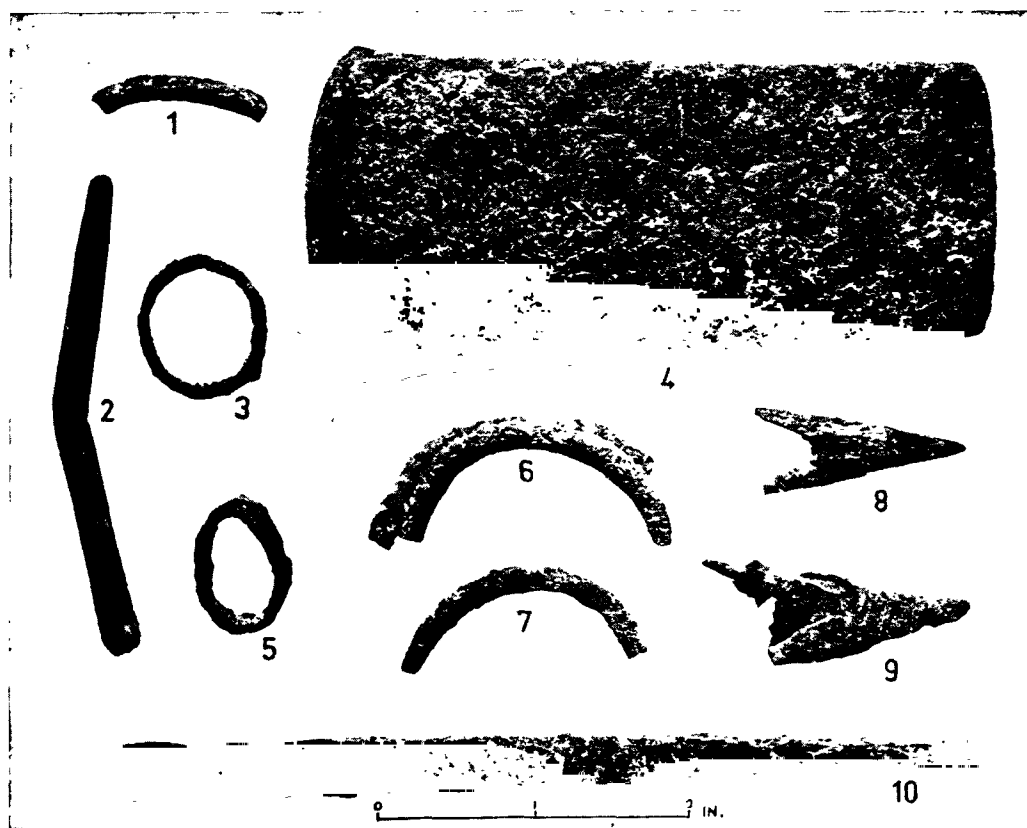
(a) Stone and terracotta pestles and grinding stone



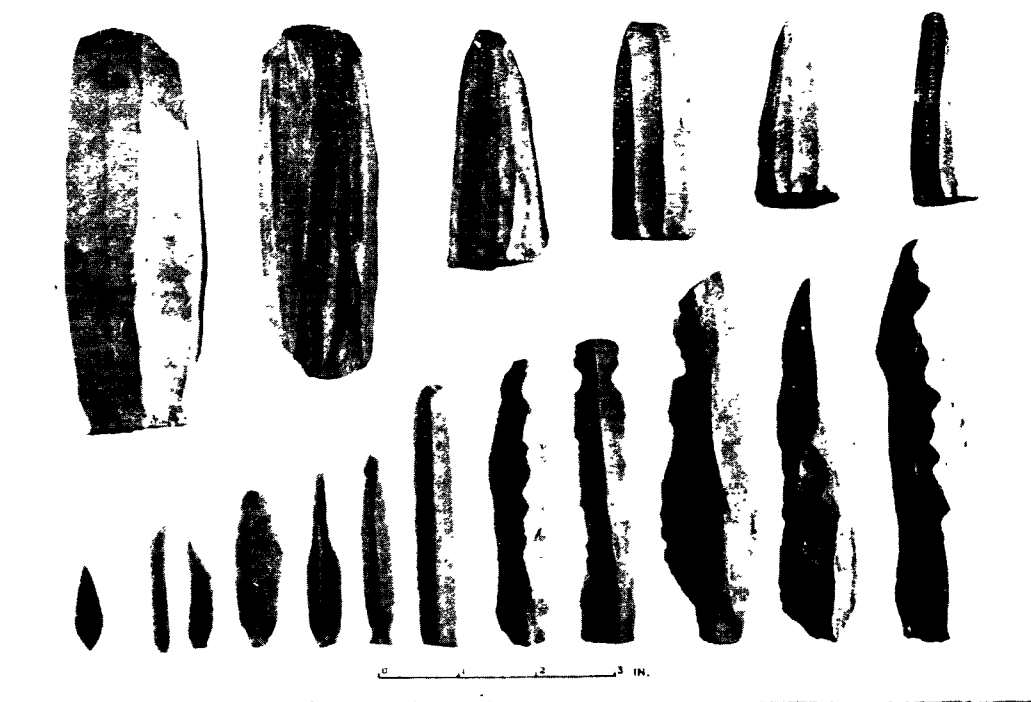
(b) Bone and shell objects



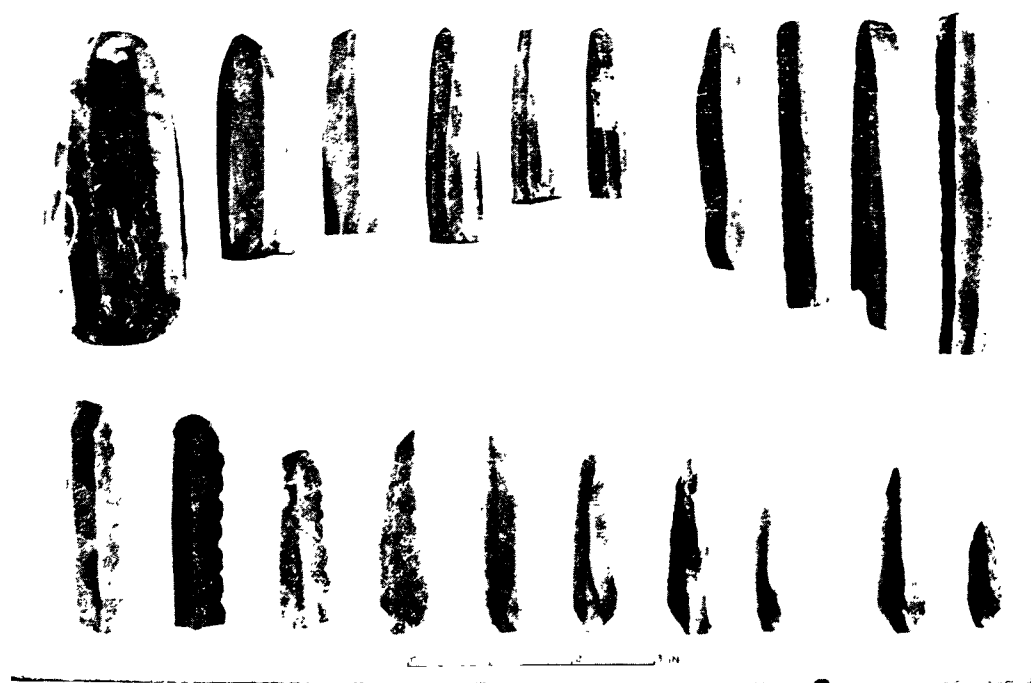
(a) Seals



(b) Bronze objects. Harappa culture



(a) Chert blades and cores. Harappa culture



(b) Chert blades and cores. Kot Diji culture

4. KD 3881, Square BIII/12, Layer (1C). Similar to No. 3 above but with slightly thickened and inscribed rim and dark slip applied on both the sides.
5. KD 2700, Square BVI/1, Layer (3A). Fragment of a large jar, of dull-red ware with straight carinated neck and clubbed rim. It is treated on the outside with bright red slip over which a peacock holding a snake is painted in black.
6. KD 2018, Square BIII/8, Layer (1B). Fragment of a vase of pale-red ware with ledged-neck and out-curved rim. It is treated on the outside with pale wash and has inscribed shoulder while a series of thin grooves occur on the inner surface.
7. KD 1250, Square AIII/24, Layer (2A). Lid of dull-red ware with bowl-shaped knob. It is devoid of any slip or wash.
8. KD 1478, Square AIII/17, Layer (1). Small lid with conical knob and corrugated inner profile.
9. KD 500, Square BIII/1, Layer (2B). Knobbed-lid of red ware, rough inner surface and upper side treated with red slip.
10. KD 3887, Square BIII/4, Layer (2). Fragment of red ware with eye-motif within circular designs above which run a series of lines in black painted on red slip.
11. KD 1095, Square AIII/24, Layer (2A). Fragment of vessel, of red ware and fine fabric, with ledged-neck and out-curved rim. Leaves and fish-scale and peacock designs painted in black on bright red slip.
12. KD 3783, Square BIII/10, Layer (2B). Fragment of red ware depicting peacock design in black-on-red.
13. KD 2249, Square AIII/22, Layer (2B). Fragment of red ware depicting fish-scale design in black-on-red.
14. KD 284, Square BIII/3, Layer (2). Fragment of dull-red ware, cross-hatched and roughly drawn leaf designs painted in black on light red slip.
15. KD 3855, Square AIII/15, Layer (6). Piece of a globular vessel, of light red ware, with internally curved-rim and red band painted around the neck.
16. KD 3901, Square BVI/1, Layer (3). Dish of an offering-stand, of red ware, with incisions in the middle.
17. KD 310, Square BIII/3, Layer (2). Fragment of a perforated vase of pale-red ware.
18. KD 3800, Square BIII/9, (2B). Lugged-fragment of red ware, depicting animal and sun designs in black-on-red.
19. KD 3816, Square AIII/14, Layer (6). Fragment of a dull-red ware, painted with a series of wavy lines in between two parallel lines in black on bright red slip.
20. KD 3788, Square BIII/11, Layer (1B). Fragment of a dish (of offering-stand?) with splayed-out rim and painted with rayed-sun motif in black on deep red slip.

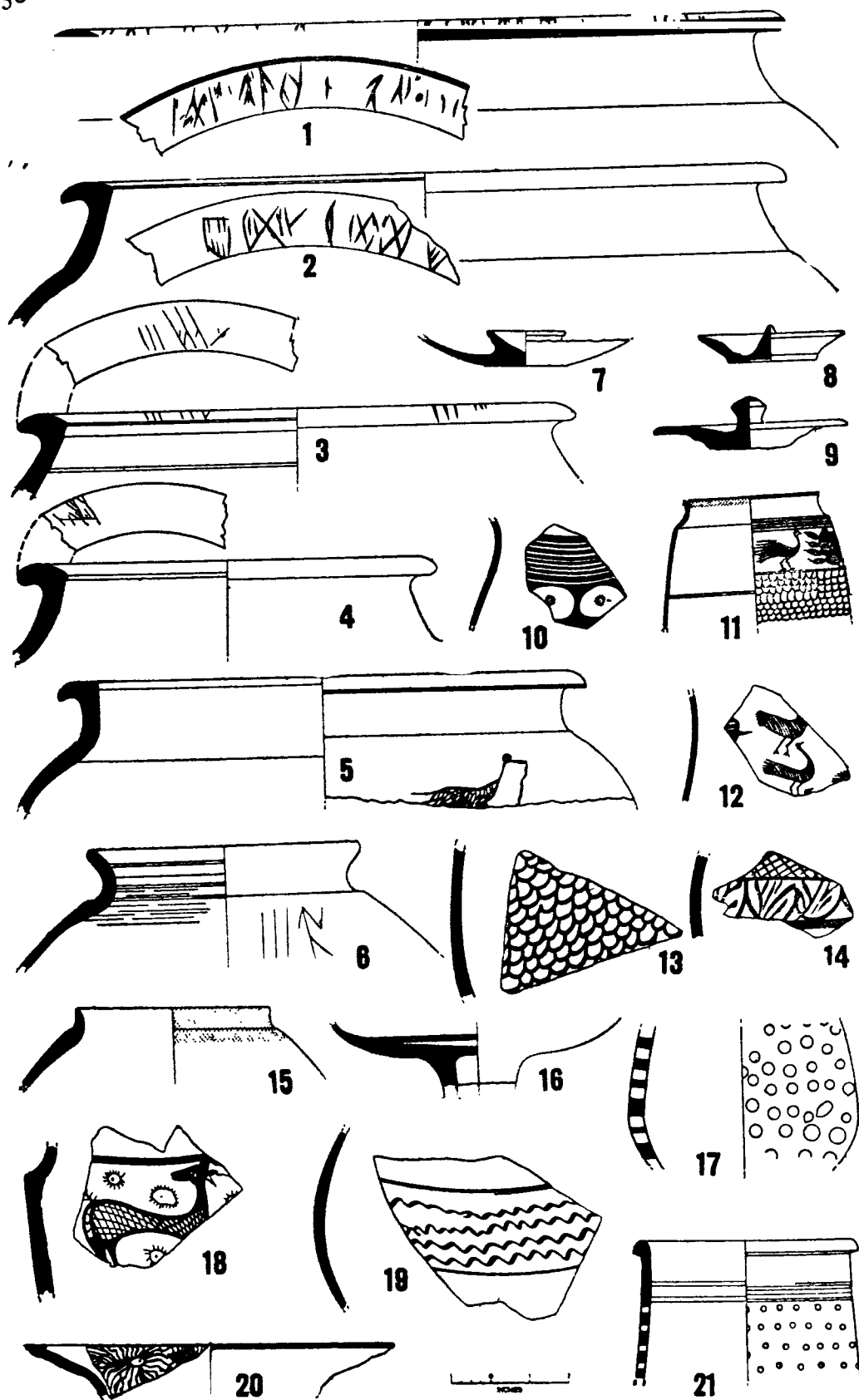


Fig. 12. Neck pieces, painted and inscribed sherds perforated vases and lids

21. KD 795, Square BIII/8, Layer (1B). Fragment of a perforated vase, of light red ware, with beaded rim and grooves on the outer and inner sides.

Fig. 13.

1. KD, Square AIII/11, Layer (5). Fragment of a vessel, of red ware with short everted neck and a dark brown band painted on the exterior surface over pale-reddish slip.
2. KD, Square AIII/11, Layer (5). Fragment of a globular vessel of light reddish ware, with short everted neck and thick profile of the shoulder, painted with red band bordered by black lines.
3. KD 3944, Square AIII/12, Layer (5). A well-fired fragment of vessel with thin fabric and under-cut rim. A band in red and a wavy line below the border in black are painted on the exterior surface.
4. KD 3817, Square AIII/14, Layer (6). Fragment of a stand without curved rim and treated on the exterior surface with red slip which is carried inside the rim in a form of band.
5. KD 3904, Square AIII/18, Layer (3). Flanged-neck of a jar of red ware and painted triangular design in black-on-red and a red band runs on the inner side of the neck.
6. KD, Square BIV/6, Layer (7). Flanged rim of jar, painted with wavy and parallel lines in black-on-red.
7. KD 3965, Square BIV/2, Layer (8). Fragment of a globular vessel with a vertical cut-rim and a red band painted around the neck.
8. KD, Square BIV/2, Layer (16). A basin-fragment of pale-red ware with incurved nail-head rim. It is treated with red slip internally and a band in red runs around the neck.
9. KD, Square BIV/2, Layer (15). Jar-fragment with almost vertical but carinated neck and nail-head rim. It is of dull red ware and is devoid of any slip or wash.
10. KD, Square AIII/17, Layer (16). Bowl fragment with out-turned pointed rim, painted inside with double parallel lines and a wavy line in black.
11. KD, Square BIV/2, Layer (9). Fragment of a globular vessel of dull-red ware and thin fabric, with short under-cut rim.
12. KD 3936, Square BIV/1, Layer (3). An offering-stand of dull-red ware painted on the outside with black bands and the inner surface of the dish also painted with black.
13. KD 3934, Square BIV/2, Layer (8). Lower part of an offering-stand of pale-red ware, exterior surface painted with wavy lines in between two black lines and a wide band in red.
14. KD 3881, Square BIII/2, Layer (2). Fragment of a jar of red ware with out-turned rim, and treated on both the sides with dark slip. The rim is inscribed with Indus script.
15. KD 2261, Square BIII/3, Layer (2). A small vase with straight neck and corrugated inner profile, painted on the exterior surface with red over pale-reddish slip.

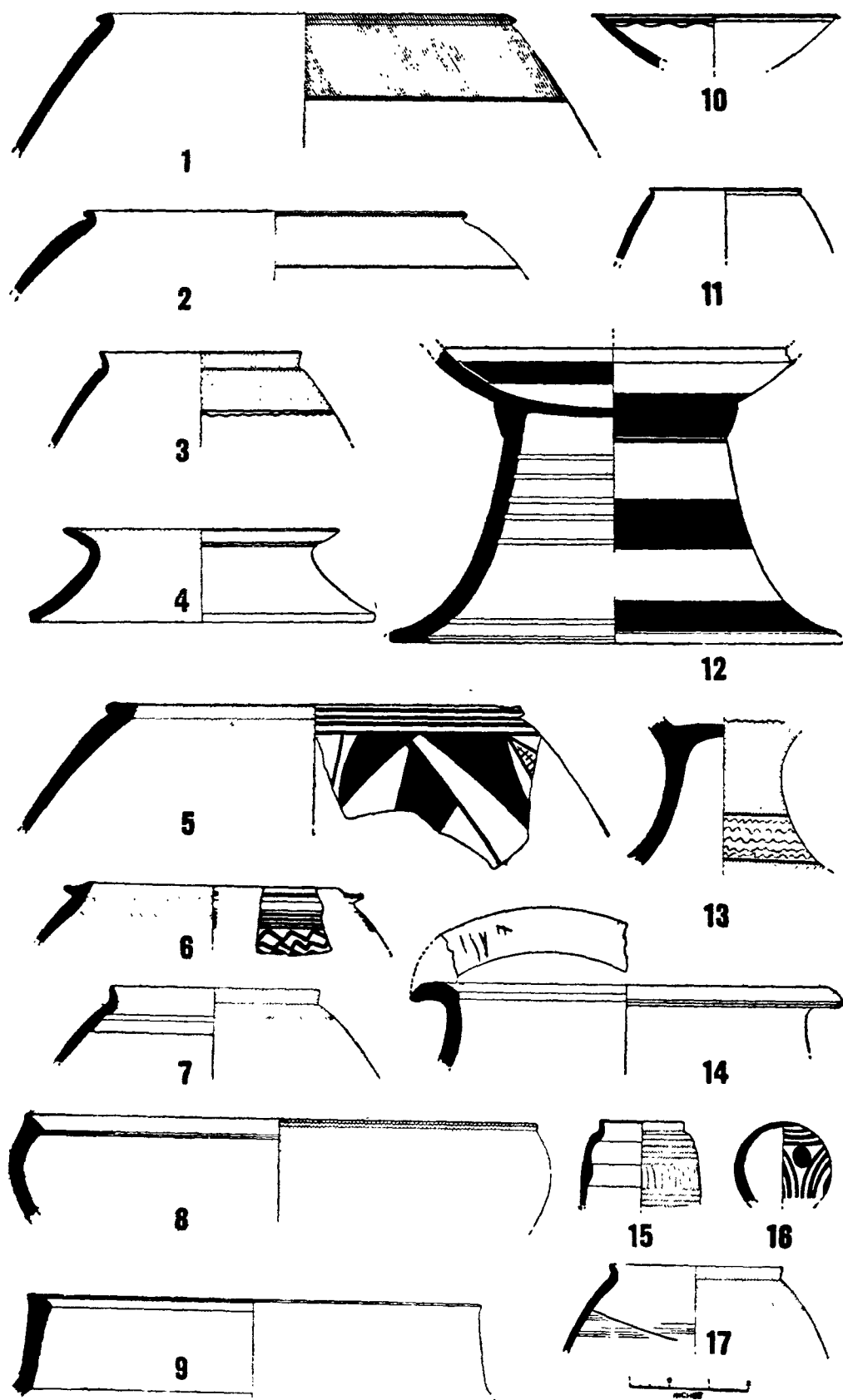


Fig. 13. Banded Neck pieces of vases bowls and pedestals

16. KD, 1065, Square AIII/21, Layer (2). A fragment of hollow ball with concentric circles and a dot in the middle painted in black.
17. KD 3951, Square BIV/6, Layer (7). Fragment of a globular vessel with short pointed neck and red band painted on the neck and shoulder.

Fig. 14.

1. KD 3915, Square AIII/19, Layer (4). Fragment of a vessel with short everted under-cut rim and painted with red bordered by a black line below.
2. KD 1385, Square AIII/12, Layer (5). Fragment of a globular vessel of red ware with carinated neck and beaked-rim. It is painted with red and looped line below the border.
3. KD 3944, Square AIII/12, Layer (5). Fragment of a globular vessel with short vertical neck and under-cut rim. It has thick profile near the shoulder.
4. KD 3852, Square AIII/11, Layer (5). Fragment of a globular vessel of pale-red ware with slightly out-curved under-cut rim and painted on the exterior with black over pale wash.
5. KD 3806, Square AIII/18, Layer (4A). Lugged-neck of a jar, painted on the exterior surface with black intersecting circle design in black-on-red and a red band runs on the inner side of the neck.
6. KD 3804, Square AIII/6, Layer (4). Jar-fragment with closing rim and perforated flang, painted on outside with black on bright red slip.
7. KD 3845, Square BIV/2, Layer (16). Dish fragment of dull-red ware, sharp rim flaring sides and painted on the inside with a series of parallel lines under which a wavy line is painted in black on light red slip.
8. KD 3811, Square AIII/11, Layer (5). A globular vessel with a prominent flang, of red ware and painted on the exterior surface with a loop and groups of wavy lines in black on bright red slip.
9. KD 3801, Square AIII/17, Layer (4B). Fragment of a vessel with vertical under-cut rim and carinated thick neck painted on the exterior surface with red.
10. KD 3906, Square AIII/18, Layer (4). A vase of red ware, with convex carinated base and painted on the exterior surface with black depicting intersecting circle design on red slip.
11. KD 3571, Square BIV/1, Layer (7). A small cylindrical vase with flat base and flaring rim.
12. KD 3905, Square AIII/14, Layer (4). Fragment of a vase with concave profile and flaring rim, band with dark-brown colour painted externally which is carried to the inner side of the rim.
13. KD 1631, Square AIII/13, Layer (6). A vase of a dull-red ware with concave profile, a band in red is painted on the exterior surface and the paint has run over the grooved body.

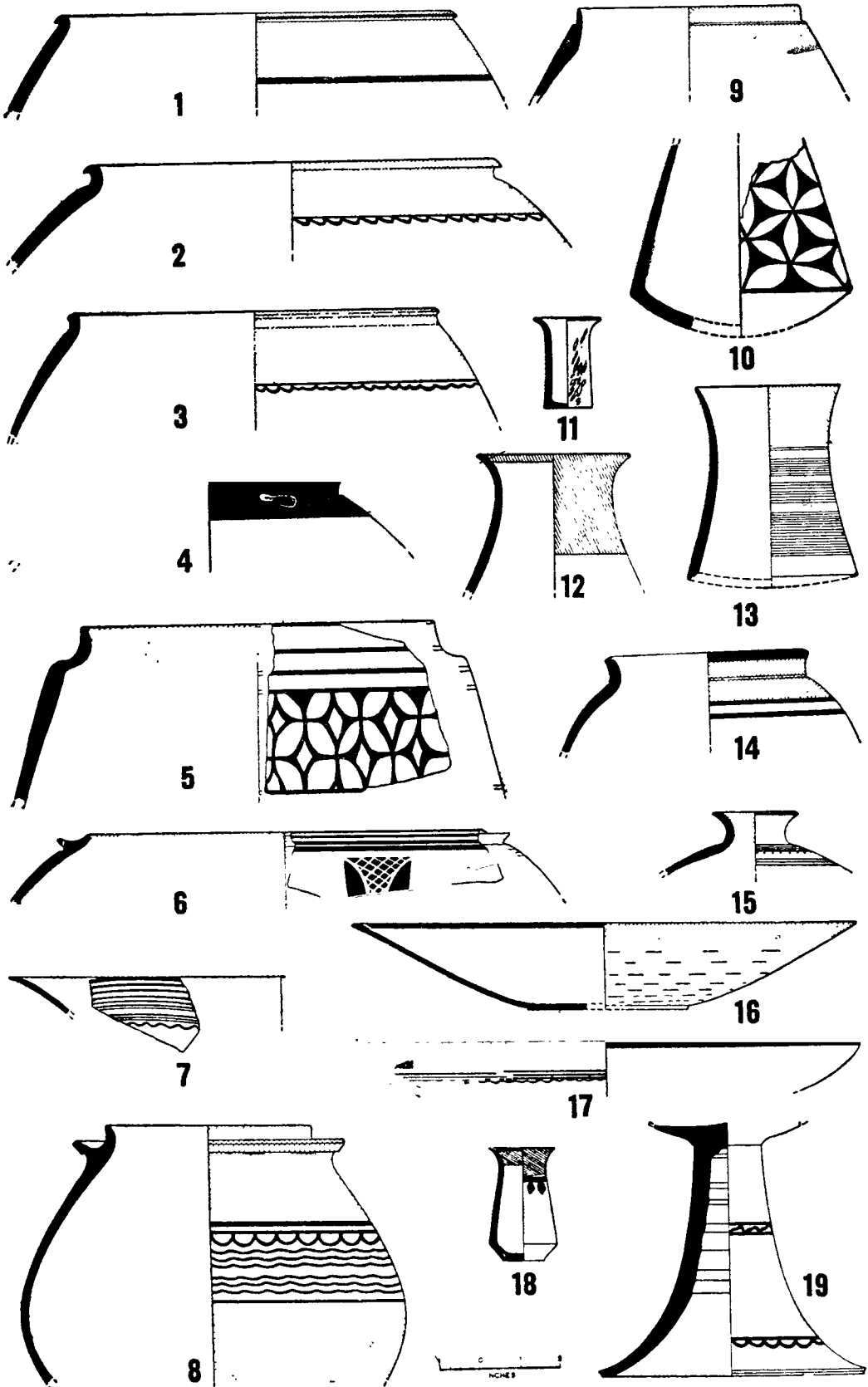


Fig. 14. Vases and globular vessels with everted, under cut and flanged rims

14. KD 3920, Square BIII/10, Layer (3A). Fragment of a globular vessel with slightly out-curved rim and painted with red bordered by a black line on the rim and two parallel lines below.
15. KD 3992, Square AIII/12, Layer (4). Narrow neck of a vase with wide shoulder, parallel lines and dotted design painted in black on the shoulder and a red band runs on the inner side of the rim.
16. KD 3850, Square AIII/17, Layer (4). Bowl of red-ware of thin fabric, with disc base and flaring sides. The inner surface is treated with red slip and a black line is painted near the rim. The outer surface is rough which shows a red band painted near the rim.
17. KD 3945, Square AIII/12, Layer (5). Bowl (?) with incurved pointed-rim, painted inside with black parallel horizontal lines and a wavy line below while a thick black line runs around the rim on the exterior surface.
18. KD 1145, Square AIII/19, Layer (3A). Vase with carinated disc-base and flaring rim. A bend with dark-brown bordered by a black line and two dots on the exterior, and a band in dark-brown border by a black line are painted on the inner side of the rim.
19. KD 1647, Square AIII/17, Layer (4A). An offering-stand of red ware with corrugated inner profile and painted on the exterior with a loop and wavy design in black-on-red.

Fig. 15

1. KD 3857, Square AIII/12, Layer (6). Jar-fragment of red ware unevenly fired, with clubbed rim and thick profile near the shoulder. It is painted on the outside with red border by a black line below.
2. KD 3825, Square BIII/10, Layer (5A). Fragment of a large jar with ledged-neck and nail-head rim, and band and a black line painted on the exterior surface.
3. KD 3839, Square BIV/2, Layer (11). Fragment of a large globular vessel with short beaked-rim and a band painted with red and three circular dots below.
4. KD 3948, Square BIII/10, Layer (5A). Fragment of a vessel with short under-cut rim and thin profile in the middle, red band bordered by two black lines is painted on the neck and shoulder.
5. KD 3860, Square BIV/2, Layer (8). Neck of a globular vessel, similar to No. 4 above, with short everted rim.
6. KD 3826, Square BIII/5, Layer (6). Neck of a globular jar with internally thickened and sharp closing-rim and a perforated flang. It is of red ware, well fired and painted on the exterior surface with black on deep red slip. A red and black line are painted on the inner side of the rim.
7. KD 2256, Square AIII/9, Layer (6). A flanged-neck of a jar similar to No. 6 above, painted with intersecting circular design in black on light red slip.

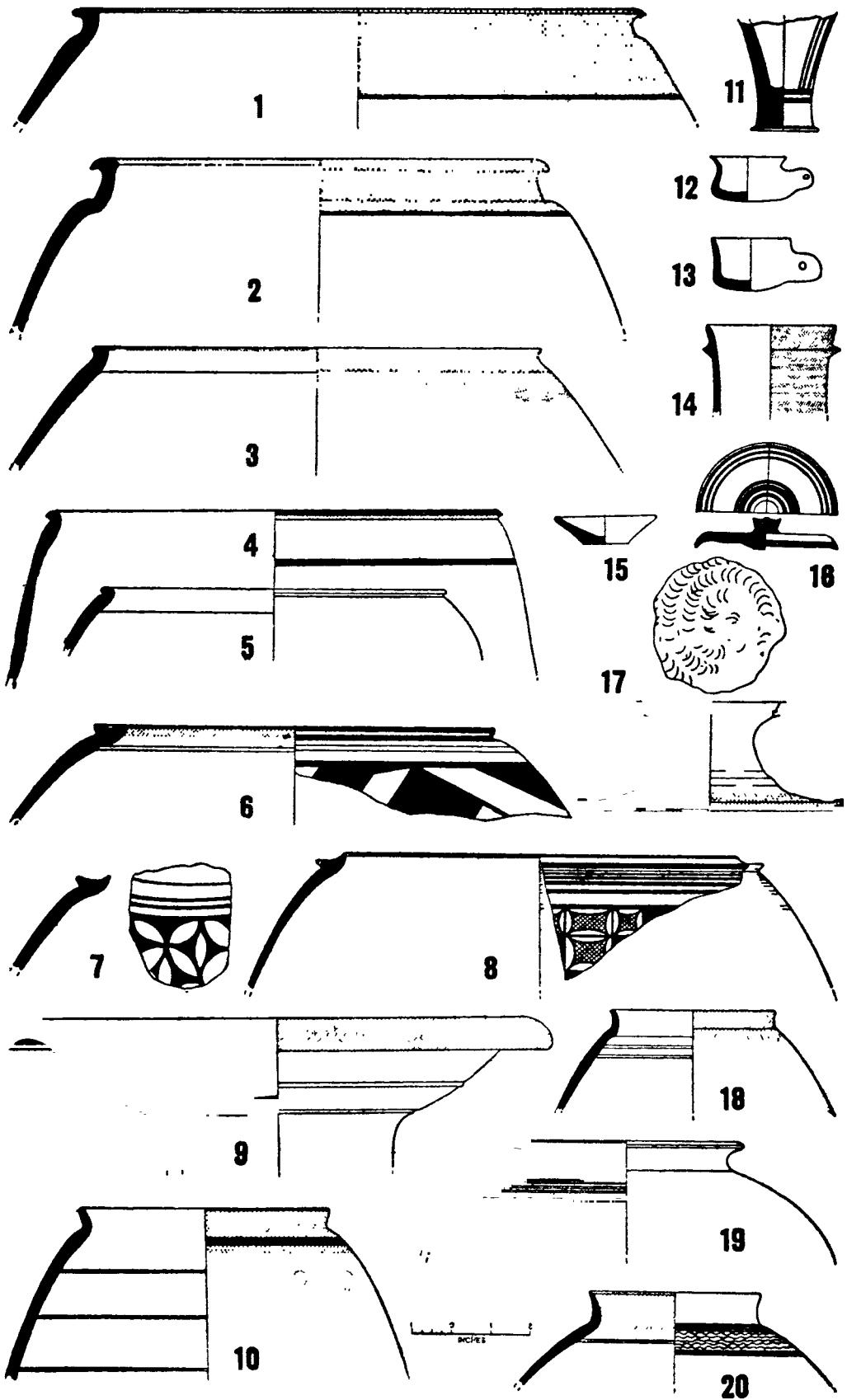


Fig. 15. Jar fragments and handled cups etc.

8. KD 3824, Square BIII/10, Layer (5A). Fragment of a flanged-jar similar to Nos. 6-7 above, painted with series of parallel horizontal lines and cross-hatched 'net' design in black on deep red slip.
9. KD 3895, Square BVI, Layer (2). Dish of an offering-stand of pale-red ware with drooping rim and treated with red slip which is carried over the rim.
10. KD 3570, Square BIV/1, Layer (6). Fragment of a globular vessel with almost vertically cut rim, a black line is painted over red band with two red circular dots below. It is of red ware and the inner side is marked by widely-spaced grooves.
11. KD 3913, Square BV/2, Layer (3). A small cylindrical vase with disc-base and flaring sides. It is painted on the exterior surface with deep red colour over pale-reddish wash (shown in the drawing in solid lines).
12. KD 2340, Square BV/3, Layer (3). A hand-made cup with convex base and out-curved rim. It is of pale-red ware, under fired and provided with a vertical-sided perforated handle.
13. KD 2865, Square BV/10, Layer (3A). A hand-nade cup, similar to No. 12 above but having almost straight profile and light-red body.
14. KD 3843, Square BIV/2, Layer (14). A vertical-sided fragment of red ware, provided with triangular cordon or flang and painted on the exterior with red and parallel lines.
15. KD 3122, Square BV/13, Layer (3). Miniature bowl with flat base and flaring sides.
16. KD 2187, Square AIII/10, Layer (6B). A knobbed-lid of red ware, painted on the upper side with black circular line on red slip.
17. KD 2850, Square BV/10, Layer (3A). A squat offering-stand of red ware, with incised nicks decoration in the middle of the dish and corrugated profile of the stand which is painted near the base with red.
18. KD 3864, Square BIV/2, Layer (11). Fragment of a globular vessel with almost straight rim and red band painted on the exterior surface and having grooved neck internally.
19. KD 3952, Square BIV/2, Layer (7). Fragment of a globular vessel with externally thickened out-curved rim and a series of grooves on the inner side below the neck.
20. KD 1861, Square AIII/15, Layer (6). Piece of a globular vessel of fine fabric with slightly out-curved pointed rim, painted on the shoulder with a series of wavy lines bordered by parallel horizontal lines in black on bright red slip. A red band is painted on the inner side of the rim below which are three grooves.

Fig. 16

1. KD 3793, Square BV/6, Layer (3A). Wide-shouldered vessel of red ware with short neck and flat base. It is painted on the exterior with black on dark brown slip, represnting horned deity and six petalled flower motif outlined with black and filled with white. Elongated leaves (?) are also painted on the horns with white.
2. KD 3795, Square BV/6, Layer (3). A globular vessel of red ware with beaked rim and flat base depicting fish scale pattern all over the exterior surface painted in black on red slip.

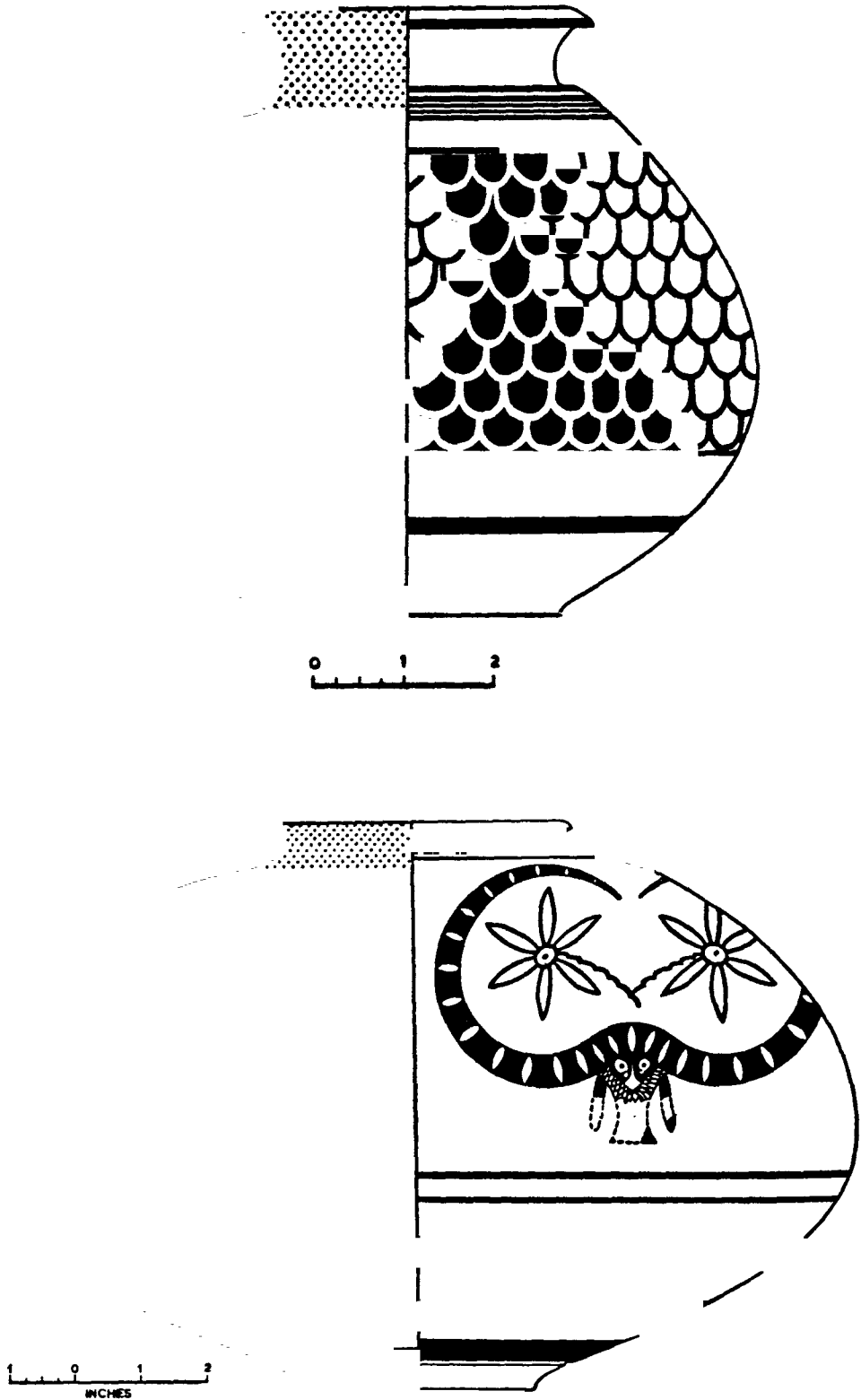


Fig. 16. Kot Dijian vessels

Fig. 17.

1. KD, Square BIV/6, Layer (16). Fragment of a pan of red ware with incurved rim. It is treated on the interior surface with dark brown slip and a wide band is painted externally below the rim. It has rough outer surface.
2. KD 3984, Square BIV/6, Layer (16). Fragment of a bowl of red ware with incurved sides and nail-head rim having grooves on the shoulder externally. A band is painted on the outside with red while the inner surface is treated with red slip.
3. KD 3985, Square BIV/6, Layer (16). Fragment of a vessel of light-reddish ware with internally curved rim and thick profile at the shoulder.
4. KD 3844, Square BIV/6, Layer (16). Bowl or dish of a dull-red ware with internally thickened rim. Horizontally parallel and wavy lines are painted on the inner surface over blackish slip with a red band below.
5. KD, Square BIV/6, Layer (16). Fragment of a globular vessel of red-dull ware with out-curved undercut rim. It is painted on the neck with band of black colour.
6. KD, Square BIV/6, Layer (16). Fragment of a vessel of red ware with out-curved pointed rim. It is well fired and treated on the exterior surface with pale-red wash. The surface below the neck is rough.
7. KD, Square BIV/6, Layer (14A). Fragment of a vessel of red ware with out-curved externally under cut rim and thick profile at the shoulder. A wide band in red is painted on the neck and shoulder.
8. KD, Square BIV/6, Layer (15). Fragment of a vessel of dark-red ware with under-cut everted rim and painted with black externally.
9. KD 3980, Square BIV/6, Layer (14). Neck of a vessel of red ware with beaded rim and a wide band in red bordered by a wavy line in black is painted externally.
10. KD 3868, Square BIV/6, Layer (14A). Fragment of a red ware with short everted rim. It is well fired and shows slightly thickened shoulder over which a wide band in dark brown is painted bordered by a black line.
11. KD, Square BIV/6, Layer (14A). Fragment of a vessel of dull-red ware with short externally thickened pointed rim. The outer surface is treated with pale wash.
12. KD, Square BIV/6, Layer (16). Fragment of vase of pale-red ware with out-curved flaring rim. It is well fired and has rough exterior surface.
13. KD, Square BIV/6, Layer (16). A painted sherd of thin fabric, depicting wavy lines and circular floral motifs painted in black over deep red slip.
14. KD, Square BIV/6, Layer (16). Fragment of pale-red ware with prominent cordon. It is treated on the both inner and outer surfaces with wash.
15. KD, Square BIV/6, Layer (16). Fragment of a pale-red ware with grooved exterior.
16. KD, Square BIV/6, Layer (15). Fragment of a bowl of dull-red ware with internally

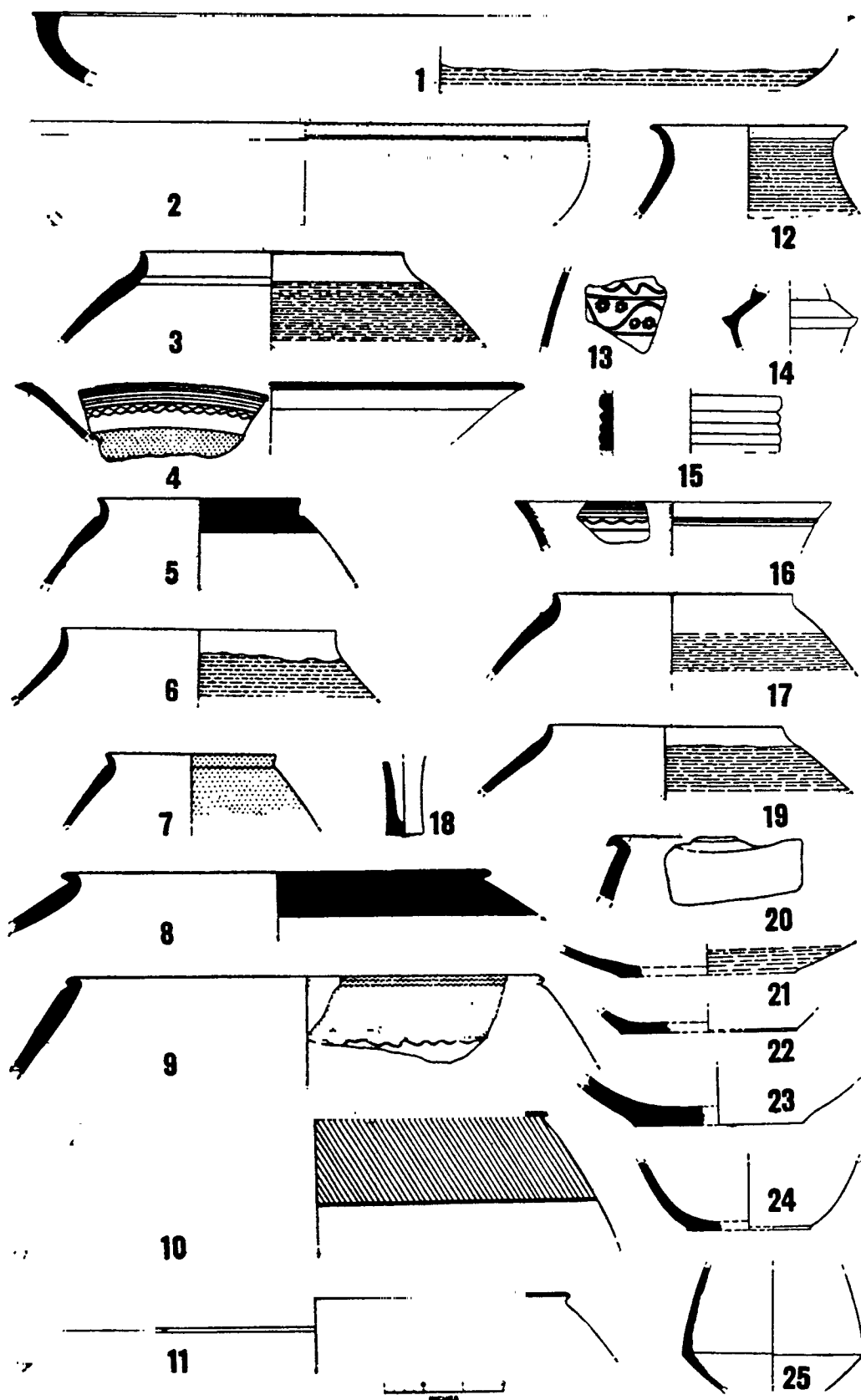


Fig. 17. Pottery from square BIV/6 layer (14A)–(16)

thickened flaring rim. It is painted with wavy and parallel lines on the inner side with dark-brown colour over dark-reddish slip.

17. KD, Square V, Layer (15). Fragment of a globular vessel of dull-red ware with thick shoulder and out-curved rim. It has rough exterior surface and is devoid of wash or slip.
18. KD, Square BIV/6, Layer (14A). Miniature hand-made cylindrical vase with convex sides and flat bottom. It is under-fired and is light-greyish ware.
19. KD, Square BIV/6, Layer (14A). Fragment of a vessel of dull-red ware with carinated neck and sharp rim. It is indifferently fired and has rough external surface.
20. KD, Square BIV/6, Layer (15). Neck-fragment of light red ware, thick fabric, with out-turned beaked rim. It is treated on the exterior surface with dark sepia slip.
21. KD, Square BIV/6, Layer (15). Bowl with flat bottom with flaring sides. It is of light-red ware and treated on the inner side with light-red slip while the outer surface is rough.
22. KD, Square BIV/6, Layer (16). Bowl-fragment of light-red ware with disc base and flaring sides. It is devoid of any slip or wash.
23. KD, Square BIV/6, Layer (14A). Base of a bowl of thick fabric and having rough exterior surface.
24. KD, 1400, Square BIV/6, Layer (14A). Bowl of red ware with incurved sides and flat disc bottom. It is thin fabric, well fired and red-slipped both externally and internally.
25. KD, Square BIV/6, Layer (14A). A vase-fragment of dull-red ware with in-turned profile and carination near the base.

Fig. 18.

1. KD, Square BIV/6, Layer (14A). Pan with incurved nail-head rim. It is of pale red ware, red slipped on the inner side and a red band is painted on the neck externally.
2. KD, Square BIV/6, Layer (14A). Pan of dull-red ware, thick fabric and with inverted nail-head rim. The interior is treated with dark-brown slip and a red band is painted on the outer surface which is otherwise rough.
3. KD, 3979, Square BIV/6, Layer (14). Pan of dull-red ware with inverted oblique rim and carinated neck. It is treated on the interior with light red slip which is carried over the neck and has carrugated profile.
4. KD, Square BIV/6, Layer (12). Pan of a light-red ware with neck and inturned obliquely cut rim. It is treated with red slip internally and a black band runs around the neck which is carried over the rim.
5. KD, Square BIV/6, Layer (12). Fragment of a bowl of thin fabric, red slipped on both the sides with externally concave neck and thick lower profile. A black line is painted on the rim.

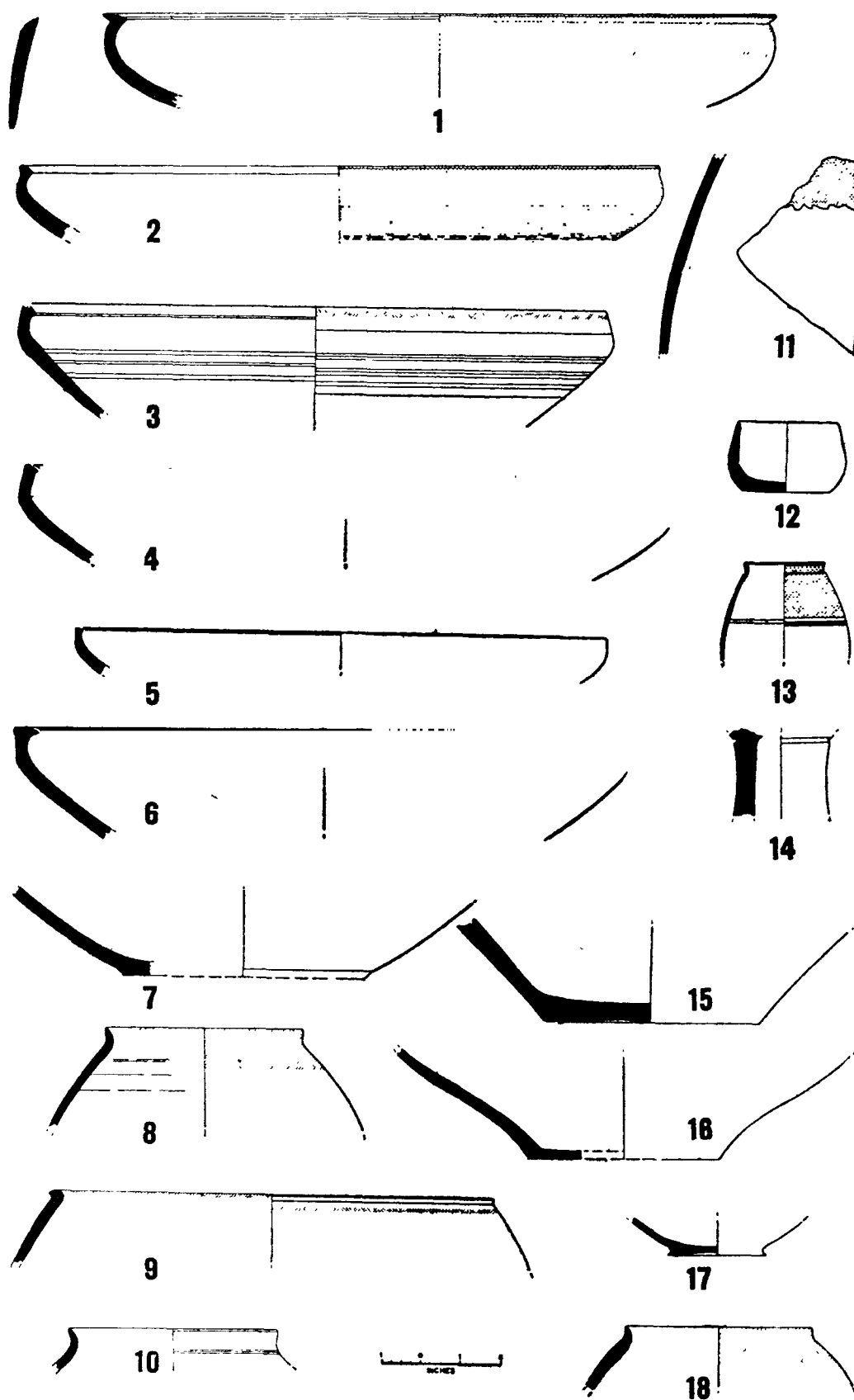


Fig. 18. Pottery from square BIV/6 Layer (12)-(14A)

6. KD, Square BIV/6, Layer (12). Bowl of dull-red ware with nail-head rim and externally carinated neck. The inner side is treated with dark brown slip, a band with dark sepia, colour is painted on the neck externally.
7. KD, Square BIV/6, Layer (13). Fragment of a bowl of dull-red ware with disc bottom and flaring sides. It is treated on the inner side with dark sepia slip.
8. KD, Square BIV/6, Layer (14). Fragment of a vessel of red ware with short everted rim, painted around the neck with red and two black lines.
9. KD, Square BIV/6, Layer (14). Fragment of a vessel of red ware with short everted rim, painted around the neck with red and two black lines.
10. KD, Square BIV/6, Layer (13). Vase-fragment of light-grey ware with out-curved grooved rim.
11. KD, Square BIV/6, Layer (14). A piece of red ware a band painted with red and a wavy line in dark brown over pale-red wash.
12. KD 3778, Square BIV/6, Layer (12). Vase of red ware with slightly incurved sides, featureless rim and flat bottom.
13. KD 3974, Square BIV/6, Layer (12). Fragment of a vase of red ware, thin fabric with internally thickened but externally cut rim. A wide band is painted in red around the neck and shoulder bordered by black lines.
14. KD, Square BIV/6, Layer (12). Fragment of an offering-stand of dull-ware with a deep groove. The outer surface is treated with bright red slip.
15. KD, Square BIV/6, Layer (12). Large bowl of pale-red ware, rough surface, flat but slightly concave base and flaring sides.
16. KD, Square BIV/6, Layer (12). Bowl of dull-red ware of medium fabric with flat bottom and flaring sides which are concave near the base.
17. KD, Square BIV/6, Layer (12). Bowl of red ware with a ring-base and flaring sides. It has rough exterior and is devoid of any slip or wash.
18. KD, Square BIV/6, Layer (14). Fragment of a globular vessel of red ware with short pointed rim and thick profile. It is painted on the neck and shoulder with a wide band in red and the external surface is treated with light pinkish wash.

Fig. 19.

1. KD, Square BIV/6, Layer (12). Fragment of a vessel with short everted rim and slightly thickened shoulder. It is of red ware, medium fabric and painted around the neck with black band. Two red lines run below and on the rim.
2. KD, 3867, Square BIV/6, Layer (12). Fragment of a globular vessel with short everted rim and neckless, painted on the outside with a wide band in red bordered by black lines.
3. KD, Square BIV/6, Layer (12). Fragment of a vessel of dull-red ware short out-curved thick rim. It is treated on the outside with red slip.

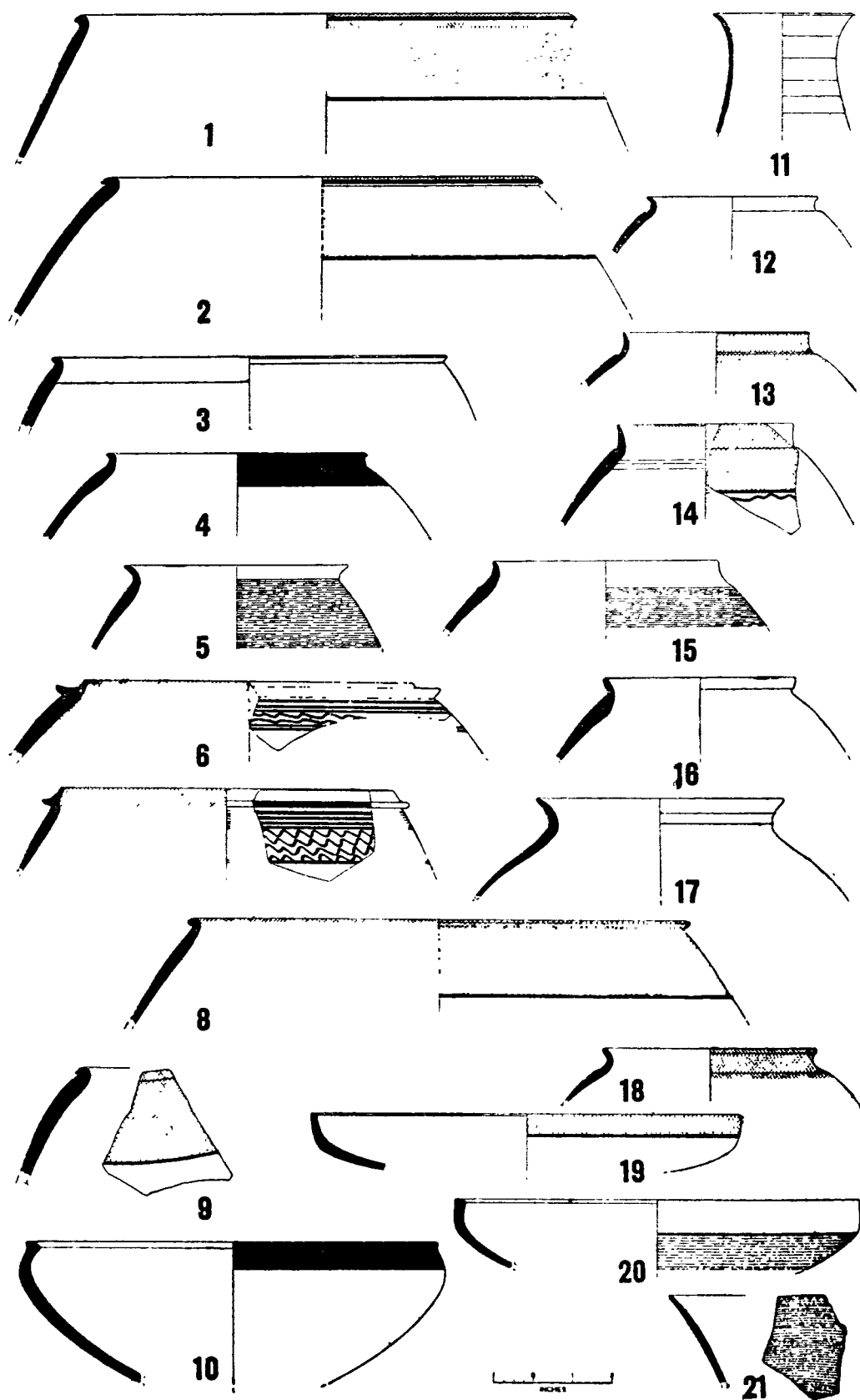


Fig. 19. Pottery from square BIV/6 Layer (11)–(12)

4. KD, Square BIV/6, Layer (12). Fragment of a globular vessel of thick fabric with short carinated neck and externally thickened rim. A band in black is painted around the neck over light-reddish wash.
5. KD, Square BIV/6, Layer (12). Fragment of a vessel without-curved rim. It is of pale-red ware, devoid of any slip or wash and shows rough external surface.
6. KD, 3775, Square BIV/6, Layer (12). Jar of reddish ware with a flange around the neck to receive lid. It is treated with red slip externally over which black wavy lines are painted in between horizontally parallel lines and painted in red near the neck on the inner side.
7. KD, 3747, Square BIV/6, Layer (11). Flanged-jar with pointed rim showing four rows of wavy lines painted in black over red slip.
8. KD, Square BIV/6, Layer (11). Fragment of a vessel of dull-red ware with short beaded rim and painted with dark red.
9. KD, Square BIV/6, Layer (11). Fragment of a globular vessel of pale-red ware with short everted under-cut rim, of thick fabric and red band bordered by black line is painted on the exterior surface.
10. KD, Square BIV/6, Layer (11). Bowl with inverted nail-head rim. It is painted on the inner sides with dark sepia colour which is carried over the rim.
11. KD, 3973, Square BIV/6, Layer (12). Fragment of a vase of thin fabric with out-curved rim and internally corrugated profile.
12. KD, Square BIV/6, Layer (12). Piece of a globular vessel with out-curved under-cut rim. It is of greyish ware, well fired and shows rough surface.
13. KD, 3866, Square BIV/6, Layer (12). Piece of a globular vessel with curved rim but externally under-cut neck, painted with red on the exterior.
14. KD, Square BIV/6, Layer (12). Fragment of vessel with internally thickened but almost concave and straight rim and under-cut neck. A band is painted on the exterior surface with red with wavy lines in black.
15. KD, Square BIV/6, Layer (12). Carinated neck of a globular vessel with out-curved rim and rough external surface which is treated with plain wash.
16. KD, Square BIV/6, Layer (12). Fragment of a vessel of light-red ware with out-curved externally thickened rim.
17. KD, 3971, Square BIV/6, Layer (11). Piece of a globular vessel with double-carinated and out-curved rim.
18. KD, 3838, Square BIV/6, Layer (11). Fragment of a vessel of pale-red ware with out-curved featureless rim and painted with dark red.
19. KD, Square BIV/6, Layer (11). Bowl-fragment with almost vertical featureless rim, painted on the exterior with red band and a black line.

20. KD, Square BIV/6, Layer (11). Bowl-fragment with slightly incurved and thickened rim. It is treated on the inner surface with dark sepia colour and a black line is painted around the neck on the other-wise rough external surface.
21. KD, Square BIV/6, Layer (11). A vase of red ware with flaring rim.

Fig. 20.

1. KD, Square BIV/6, Layer (10). Neck-fragment of a large jar with out-turned beaked-rim. It is of red ware and treated on the outside with pale-reddish wash.
2. KD, Square BIV 6, Layer, (10). Fragment of a globular vessel with sharp everted rim and painted on the exterior with black.
3. KD, Square BIV 6, Layer (10). Fragment of a globular vessel with short everted rim similar to No. 2 above but has thick upper profile. It is treated on the exterior surface with red slip.
4. KD, Square BIV/6, Layer (10). Short-necked fragment of a vessel with externally thickened beaded rim and treated with red slip externally.
5. KD, 3446, Square BIV/6, Layer (10). Fragment of a vessel with wide shoulder and undercut rim.
6. KD, Square BIV/6, Layer (10). Neck of a globular vessel of pale-red ware with out-curved featureless rim and having rough external surface.
7. KD, Square BIV/6, Layer (10). Fragment of a vessel of light red ware with internally concave featureless rim and painted on the exterior with red band.
8. KD, Square BIV/6, Layer (10). Splayed-out rim of a vessel of light-red ware with carinated neck. It has rough exterior surface.
9. KD, Square BIV/6, Layer (10). Piece of a globular vessel of red ware with out-curved featureless rim and rough external surface. (A variant of No. 8 above).
10. KD, Square BIV/6, Layer (10). Short everted rim of an over-fired grey ware.
11. KD 3837, Square BIV/6, Layer (10). Fragment of a globular vessel with internally thickened but externally under-cut rim and painted on the exterior with black.
12. KD 3939, Square BIV/6, Layer (10). Complete vase with convex sides with flaring rim and carination near the disc base. It is of pale-red ware and treated on the exterior surface with light-red slip which shows number of horizontally marked incisions.
13. KD, Square BIV/6, Layer (10). Cup of red ware with disc bottom and carination near the base.
14. KD, Square BIV/6, Layer (10). Vase-fragment of dull-red ware with flaring sides and carinated flat bottom.
15. KD, Square BIV/6, Layer (10). Fragment of a globular vessel of dull-red ware with ledged-neck and having rough external surface.

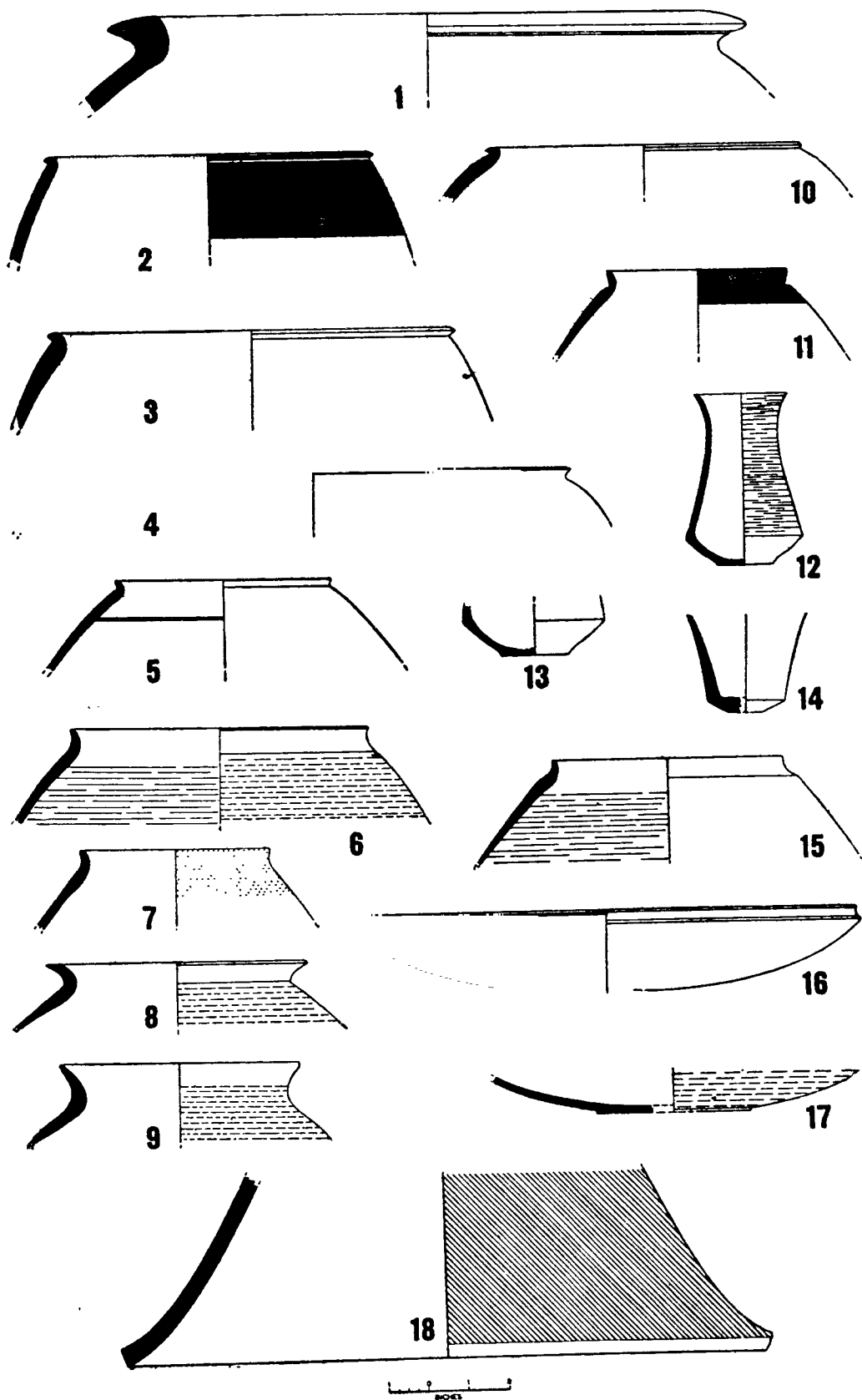


Fig. 20. Pottery from square BIV/6 layer (10)

16. KD 3863, Square BIV/6, Layer (10). Shallow bowl with carinated nail-head rim and treated on both the sides with dark sepia colour.
17. KD, Square BIV/6, Layer (10). Bowl with slightly in-curved profile and disc base. It has rough external surface and shows marks of sepia slip on the inner side.
18. KD, Square BIV/6, Layer (10). Fragment of a stand of red ware with obliquely cut base and brown slipped externally.

Fig. 21.

1. KD, Square BIV/6, Layer (9). Fragment of a globular vessel with out-curved but externally under-cut rim, painted with black on the exterior surface.
2. KD, Square BIV/6, Layer (9). Piece of globular vessel of red ware with slightly out-turned rim. A red band is painted around the neck externally.
3. KD, Square BIV/6, Layer (9). Fragment of a globular vessel of dull-red ware with almost straight neck and painted with red on the outer surface and has grooved interior.
4. KD, Square BIV/6, Layer (9). Lugged-neck of a globular vessel of pinkish-red ware having rough external surface.
5. KD, Square BIV/6, Layer (9). Fragment of a vessel of pale-red ware with slightly out-curved featureless rim. A wide band is painted in black on the outer surface.
6. KD 3941, Square BIV/6, Layer (9). Inscribed fragment of a globular vessel with faint horizontal grooves on the inner side.
7. KD, Square BIV/6, Layer (9). Neck of a globular vessel of pale-red ware having thick upper profile and slightly out-curved rim with rough external surface.
8. KD 3967, Square BIV/6, Layer (9). Vase of red ware with high pedestalled base and concave lower profile. It is of unusually fine fabric and shows bright red slip on the external surface.
9. KD, Square BIV/6, Layer (9). Out-curved lugged-rim of a globular vessel of dull-red ware having pale wash on the rough outer surface.
10. KD, Square BIV/6, Layer (9). Splayed-out rim of a vessel having thick upper profile internally. It is of dull red ware and has rough external surface.
11. KD, Square BIV/6, Layer (9). Fragment of a vase with convex profile and featureless rim. It is treated on the outer surface with dark-red slip.
12. KD, Square BIV/6, Layer (9). Fragment of a lid of light-red ware and treated on the exterior surface with dark brown slip.
13. KD 3835, Square BIV/6, Layer (9). Lid, similar to No. 12 above, semi-circular design painted in black-on-red.
14. KD 3835, Square BIV/6, Layer (9). Lid, similar but differs from No. 13. above in having thick fabric and concentric semi-circle design painted in black-on-red.

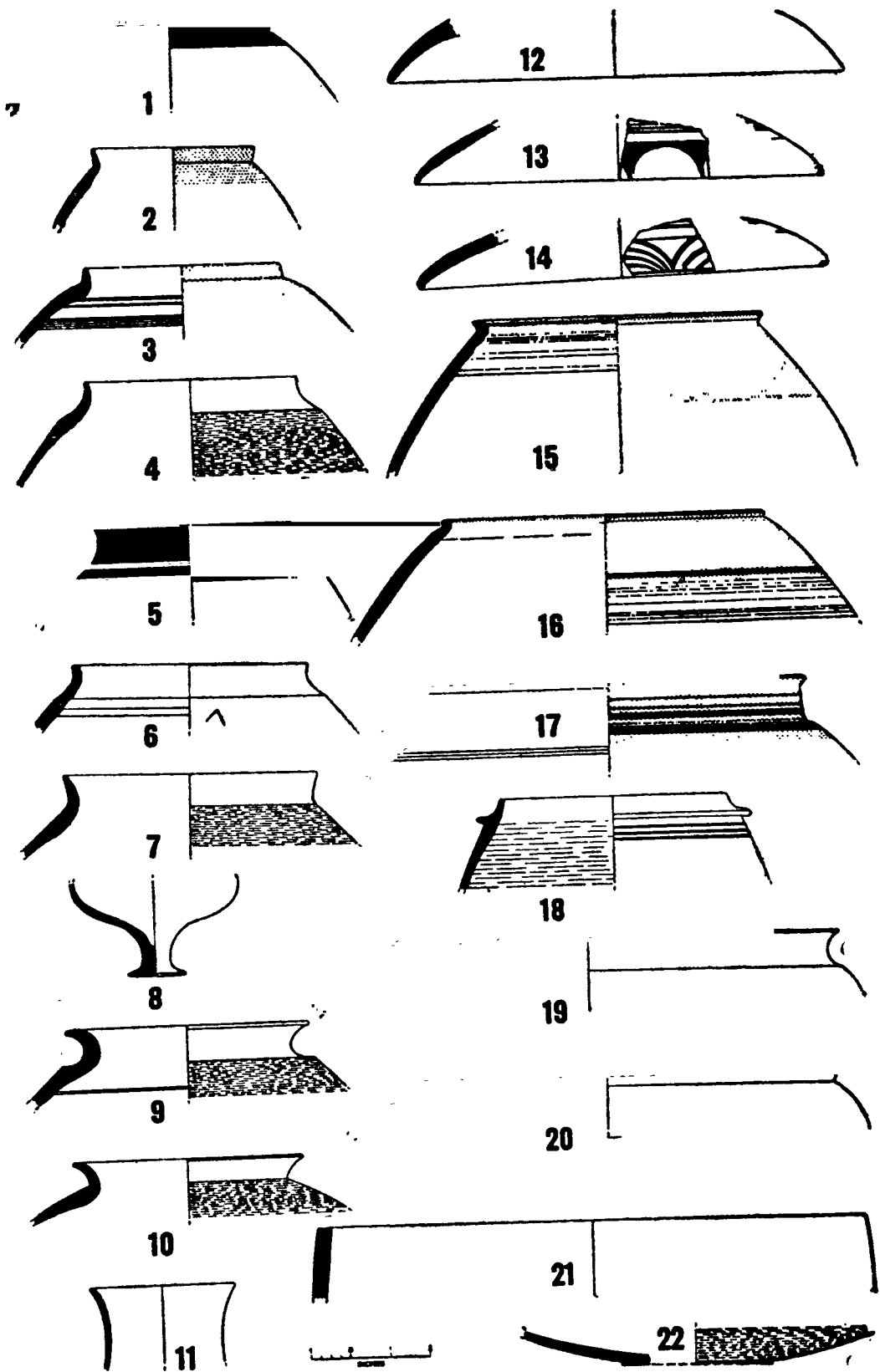


Fig. 21. Pottery from square BIV/6 Layer (9)

15. KD 3836, Square BIV/6, Layer (9). Fragment of a globular vessel with short beaked-rim and painted dark red band on the exterior.
16. KD 3998, Square BIV/6, Layer (9). Short rim of a vessel, variant of No. 15 above, having red band bordered by black lines and a series of thin grooves below.
17. KD, Square BIV/6, Layer (9). Fragment of a jar with almost vertical neck and nail-head rim. It is painted on the neck and shoulder with red over which are drawn black lines.
18. KD, Square BIV/6, Layer (9). Flanged-rim of a jar of red ware, painted with black on red slip. Showing thin grooves on the inner side.
19. KD, Square BIV/6, Layer (9). Fragment of a jar with internally thickened neck and beaked-rim. It is of dull-red ware and treated on the outside with dark-brown slip and a brown line is painted on the rim.
20. KD, Square BIV/6, Layer (9). Fragment of a flang-jar having internally thickened closing rim. It is of dull-red ware and shows traces of red slip on the exterior.
21. KD, Square BIV/6, Layer (9). Vertical-sided bowl fragment of pale-red ware, devoid of any wash or slip.
22. KD, Square BIV/6, Layer (9). Disc-base of a shallow bowl having rough external surface and flaring sides. It is of reddish ware and shows grey slip on the interior.

Fig. 22.

1. KD 3862, Square BIV/6, Layer (9). Basin with obliquely-cut inverted rim and carinated neck. It is of pale-red ware and shows red slip on the interior which is carried over the neck outside.
2. KD, Square BIV/6, Layer (9). Fragment of a basin with in-turned clubbed rim and carinated neck. It is treated with dark slip (resembling dark sepia colour) on the inner side and a band runs around the neck.
3. KD 3969, Square BIV/6, Layer (9). Fragment of a basin with pronounced carination at the neck and nail-head rim. It is treated with deep red slip on the inner side and a band in red is painted on the neck externally.
4. KD, Square BIV/6, Layer (9). Fragment of bowl of greyish ware with flaring sides and internally thickened featureless rim having dark-grey slip on the inner and outer surface.
5. KD, Square BIV/6, Layer (9). Fragment of a bowl with out-turned clubbed rim and flaring sides. It is fired to light-greyish colour.
6. KD, 3968, Square BIV/6, Layer (9). Fragment of a bowl with concave sides, thick upper profile and clubbed rim. It is red slipped both externally and internally.
7. KD 3963, Square BIV/6, Layer (8). Bowl-fragment with flat rough base and flaring but internally corrugated sides. It is of pale-red ware and shows pale-reddish wash on the inner side.

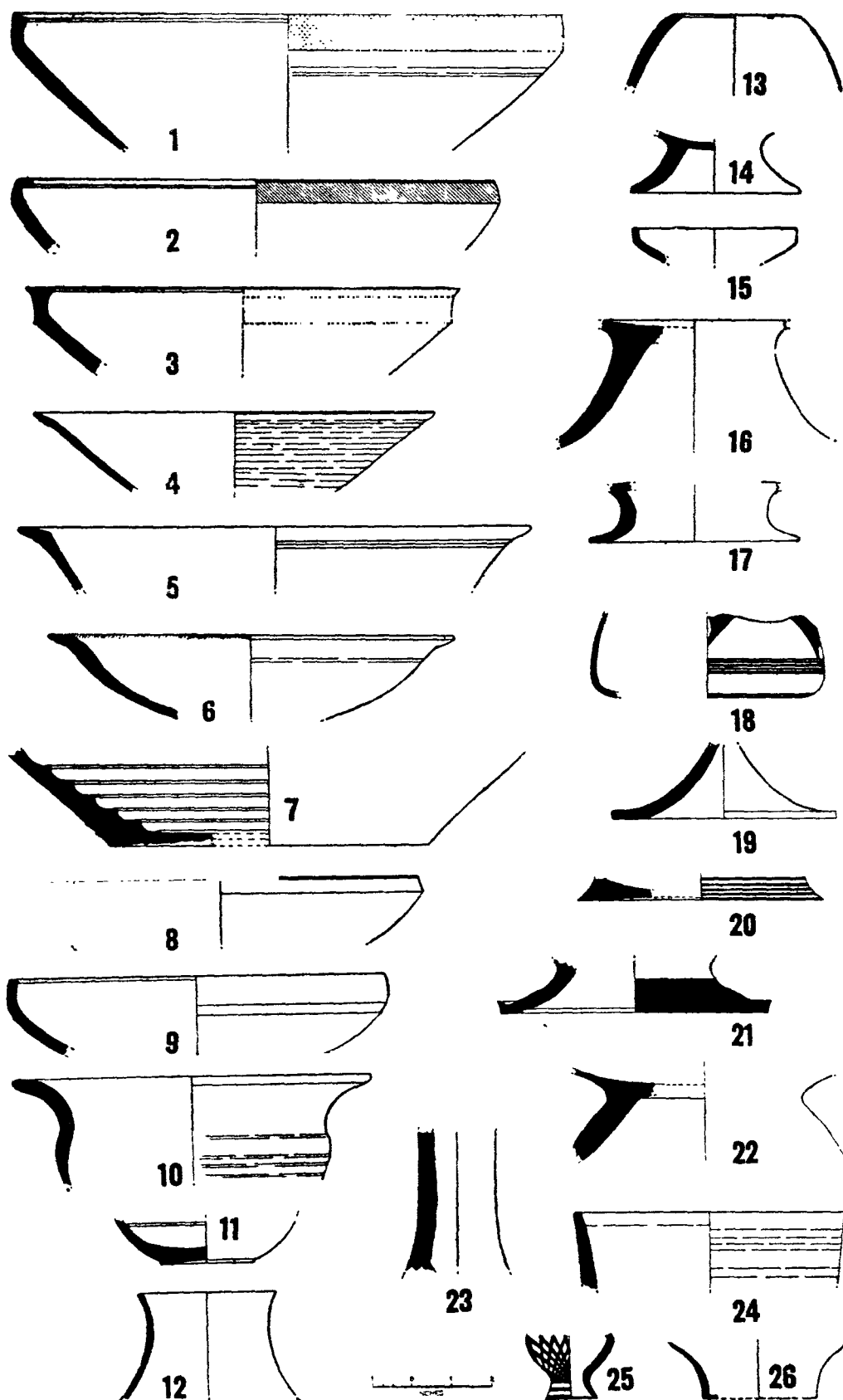


Fig. 22. Pottery from square BIV/6 Layer (8)–(9)

8. KD, Square BIV/6, Layer (8). Bowl with inturned featureless rim, red ware and having bright-red slip on both the sides.
9. KD, Square BIV/6, Layer (8). Bowl with slightly incurved featureless rim.
10. KD, Square BIV/6, Layer (8). Fragment of a bowl (?) with out-curved flaring rim and concave profile. It is of dull red ware, has rough outer surface and treated on the inner with deep red slip.
11. KD, Square BIV/6, Layer (8). Ringed-base of a bowl of dull red ware with concave sides and treated with red slip externally.
12. KD, Square BIV/6, Layer (8). Fragment of a vase of pale-red ware with concave profile and thin fabric.
13. KD, Square BIV/6, Layer (9). Fragment of a vessel with closing featureless rim. It is of dull red ware and has traces of red slip on the exterior.
14. KD, Square BIV/6, Layer (9). Base of stand of red ware, unevenly fired and having dark sepia slip on the outer surface.
15. KD, Square BIV/6, Layer (9). Small bowl with almost straight rim and tapering lower profile.
16. KD, Square BIV/6, Layer (9). Over-fired stand of red ware showing red slip on the outer surface.
17. KD, Square BIV/6, Layer (9). Small stand, unevenly fired which shows traces of red slip.
18. KD 3967, Square BIV/6, Layer (9). An unusually fine piece of a vase of light red ware, well fired and painted with black on bright red slip.
19. KD, Square BIV/6, Layer (8). Fragment of a stand of dull red ware having dark sepia slip externally.
20. KD, Square BIV/6, Layer (8). Base or stand of red ware, of fine fabric, well fired and painted on the exterior with black on bright red slip.
21. KD, Square BIV/6, Layer (8). Fragment of a stand, rough surface and painted near the base with black.
22. KD, Square BIV/6, Layer (8). Fragment of an offering-stand of dull red ware with traces of red slip inside the dish.
23. KD, Square BIV/6, Layer (8). Stem of an offering-stand of light red ware having rough surface without slip or wash.
24. KD, Square BIV/6, Layer (8). Vertical-sided bowl (?) fragment with rough grooves on the exterior surface.
25. KD 3962, Square BIV/6, Layer (8). Small vase of pale-red ware with cross-hatched black line painted all over the body.
26. KD, Square BIV/6, Layer (8). A bowl or cup of light red ware with flat base and concave lower profile. It has bright slip on the external surface.

Fig. 23.

1. KD, Square BIV/6, Layer (8). Fragment of a large pan of pale-red ware with flaring rim and prominent flang and rough external surface.
2. KD, 3960, Square BIV/6, Layer (8). Fragment of vessel with under-cut everted rim and painted with red band on the shoulder bordered by black lines. It is thin bodied and made of well lavigated clay.
3. KD, 3861, Square BIV/6, Layer (8). Fragment of a globular vessel with short neck and out-curved beaked rim. It is of dull-red ware, well fired and a wide band in black is painted externally.
4. KD, Square BIV/6, Layer (8). Neck of a globular vessel of pale-red ware with vertical featureless rim. It is treated with wash externally.
5. KD, 3958, Square BIV/6, Layer (8). Fragment of a vessel with short everted obliquely-cut rim and thick upper profile, painted with black band around the shoulder.
6. KD, 3959, Square BIV/6, Layer (8). Fragment of a globular vessel of light red ware, well fired with internally thickened but obliquely-cut rim externally. It is painted with black over pale slip.
7. KD, 3646, Square BIV/6, Layer (8). Small lid of red ware with grooved knob and paintdd with black over red slip.
8. KD, 3833, Square BIV/6, Layer (8). Fragment of a globular vessel of red ware with short neck and thick profile in the middle. Its exterior surface is treated with light-reddish wash which is rough in the lower part.
9. KD, Square BIV/6, Layer (8). Piece of a globular vessel with out-curved rim and thick profile at the shoulder. A wide band is painted with black on the outside.
10. KD, 3933, Square BIV/6, Layer (8). Fragment of vessel of dull-red ware with out-curved neck having incised mark on the rough external surface.
11. KD, Square BIV/6, Layer (8). Fragment of a vessel internally straight rim and thick paper profile, a band is painted in red on the exterior while the inner side shows a series of thin grooves.
12. KD, Square BIV/6, Layer (8). Roughly-made fragment of dark-red ware with out-curved rim and thick profile.
13. KD, Square BIV/6, Layer (8). Piece of a vessel with carinated neck and out-curved rim having rough exterior.
14. KD, Square BIV/6, Layer (7). Fragment of globular vessel of red ware with short straight neck and treated with pale wash on the exterior.
15. KD, 3858, Square BIV/6, Layer (7). Neck of a globular vessel with short rim and painted on the outside with black. It is an over-fired piece.
16. KD, Square BIV/6, Layer (7). Fragment of a small vase of pale-red ware with short

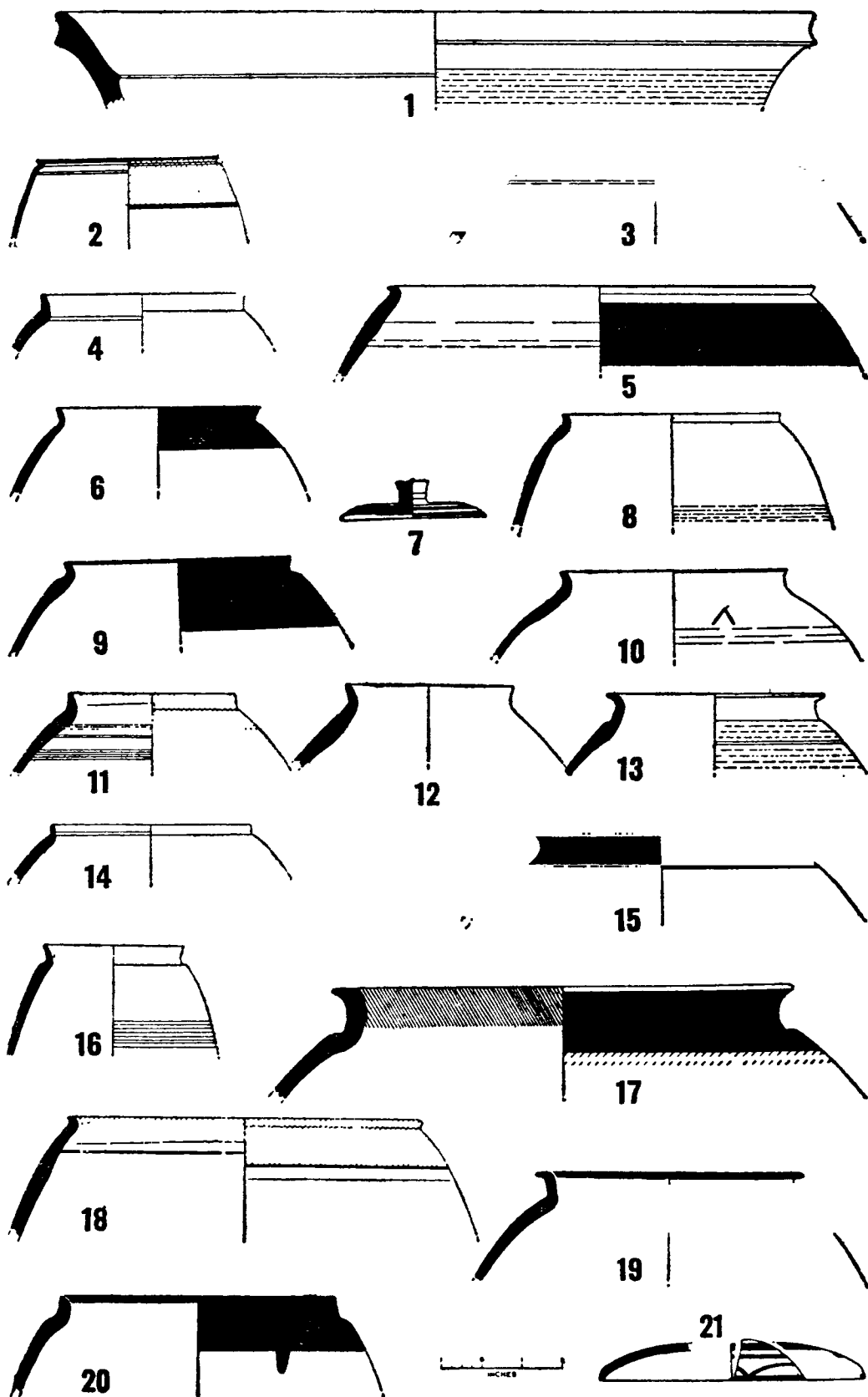


Fig. 23. Pottery from square BIV/6 Layer (7)–(8)

out-turned rim. It is treated with pale-whitish wash externally and shows a series of grooves in the lower part.

17. KD, 3961, Square BIV/6, Layer (7). Fragment of a large jar of light-red ware with out-curved beaked-rim and painted on the outside with black, bordered by two brown lines below. A band in dark brown runs on the inner side of the neck.
18. KD, 3828, Square BIV/6, Layer (7). Fragment of a globular vessel of red ware with short everted rim and thick profile in the lower part, painted with red bordered by black line below.
19. KD, 3951, Square BIV/6, Layer (7). Fragment of a globular vessel with almost vertical neck and clubbed rim. It is painted on the outside with black over whitish slip. It is of red ware and over-fired.
20. KD, 3953, Square BIV/6, Layer (7). Fragment of a vessel with internally thickened sharp rim and ledged-neck. It is painted with black on the outer surface and the paint has run below the carefully ruled band.
21. KD, 3859, Square BIV/6, Layer (7). A lid of pale-red ware, painted with black on bright red slip.

Fig. 24.

1. KD, Square BIV/6, Layer (7). Flanged-rim of a jar of red ware showing wavy and horizontally parallel lines painted in black on bright red slip and a band in red runs inside the rim.
2. KD, Square BIV/6, Layer (7). An unusual piece of pale-red ware having vertical flang probably to hold the lid. It is treated with pale reddish wash externally and shows rough inner surface.
3. KD 3829, Square BIV/6, Layer (7). A bowl or pan of light-red ware with carinated vertical neck and nail-head rim. It is painted with red on both the sides.
4. KD, Square BIV/6, Layer (7). Fragment of a basin with ledged-neck and beaked-rim. It is of red ware and painted on the rim with black and with red around the neck externally. It is treated with red slip on the inner side while the outer surface below the neck is rough.
5. KD, 3954, Square BIV/6, Layer (7). Ledged-rim of a basin of red ware, painted inside with black on red slip while a red band runs outside around the neck externally.
6. KD, 3827, Square BIV/6, Layer (7). Fragment of an over-fired globular vessel with short neck and treated on the outer surface with light reddish wash.
7. KD, Square BIV/6, Layer (7). Fragment of a bowl with out-curved externally grooved rim and carination below. It is of light-red ware and treated on both the side with light red slip.
8. KD, 3935, Square BIV/6, Layer (6). Fragment of a bowl with incurved rim and thick tapering profile. It is of pale-red ware and treated on the inside with dark sepia slip while the outer surface is rough.

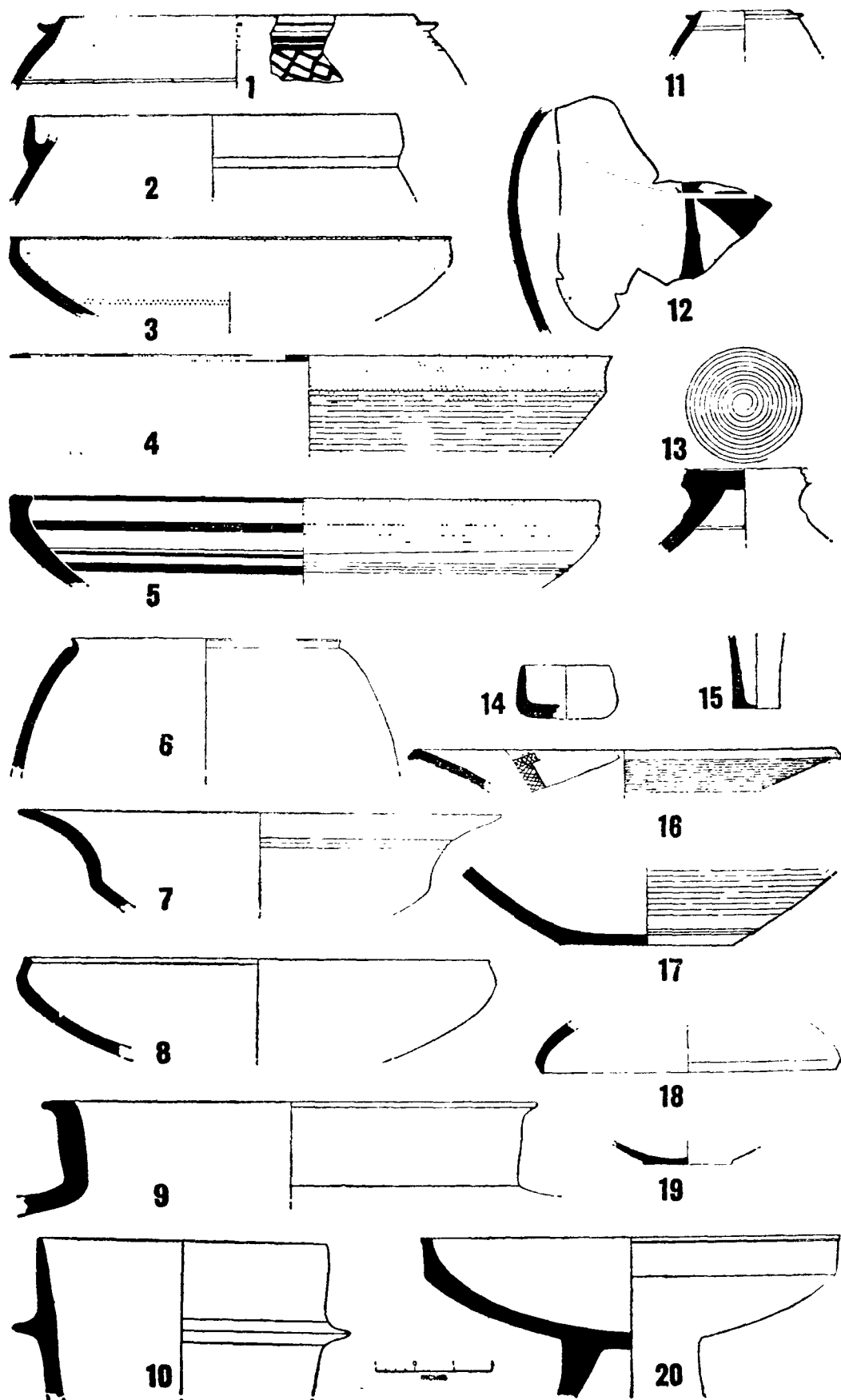


Fig. 24. Pottery from square BIV/6 Layer (6)–(7)

9. KD, Square BIV/6, Layer (6). Carinated neck of large jar with clubbed rim. It is of pale-red ware and treated on both the sides with red slip.
10. KD, 3949, Square BIV/6, Layer (6). A vertical-sided neck with sharp featureless rim and having a prominent flang in the middle. It is of pale-red ware and has rough outer surface.
11. KD, 3955, Square BIV/6, Layer (7). A flanged-neck of small jar, of unusually fine fabric and treated on the exterior surface with red slip.
12. KD, Square BIV/6, (from disturbed) Layer (7). A painted potsherd of pale-red ware having filled-in diamond (?) motif in black over bright red slip.
13. KD, Square BIV/6, Layer (7). Fragment of a squat offering-stand of pale-red ware with concentric circle design incised on top.
14. KD, 3957, Square BIV/6, Layer (7). A small cup of indifferently fired red ware with vertical profile and flatbase.
15. KD, Square BIV/6, Layer (7). A small cylindrical vase of pale-red ware with flat base and convex sides.
16. KD, 3932, Square BIV/6, Layer (6). A fragment of a shallow bowl or dish with inverted beaked-rim and corrugated profile. Cross-hatched incisions on the inner side while the outer surface is rough.
17. KD, Square BIV/6, Layer (7). Fragment of a bowl with flat base, flaring sides and rough outer surface. The interior is treated with sepia slip.
18. KD, 3829, Square BIV/6, Layer (7). Fragment of a lid of pale-red ware with obliquely cut rim and treated around the rim and neck with red both externally and internally.
19. KD, Square BIV/6, Layer (7). A small bowl of dark brown ware with disc-base and flaring sides. It is treated with greyish slip on both the sides.
20. KD, 3940, Square BIV/6, Layer (7). An offering-stand of red ware with vertical neck and featureless rim of the dish, provided with a hollow stand.

Fig. 25.

1. KD, Square BIV/6, Layer (6). Fragment of a globular vessel with short everted rim and painted on the outside with black over light-reddish slip.
2. KD, Square BIV/6, Layer (6). Fragment of a vessel with out-curved rim on which runs a red line. It is of red ware and has rough outer surface.
3. KD, Square BIV/6, Layer (6). Piece of a globular vessel with short under-cut rim and painted on the exterior surface with red band.
4. KD, Square BIV/6, Layer (6). Fragment of a vessel with carinated neck and out-turned nail-head rim and painted on the outside with red around the neck.
5. KD, 3856, Square BIV/6, Layer (6). Fragment of a large vessel with in-turned nail-head rim and carinated neck. It has thick profile near the shoulder and is painted with black bordered by red line on the outer surface.

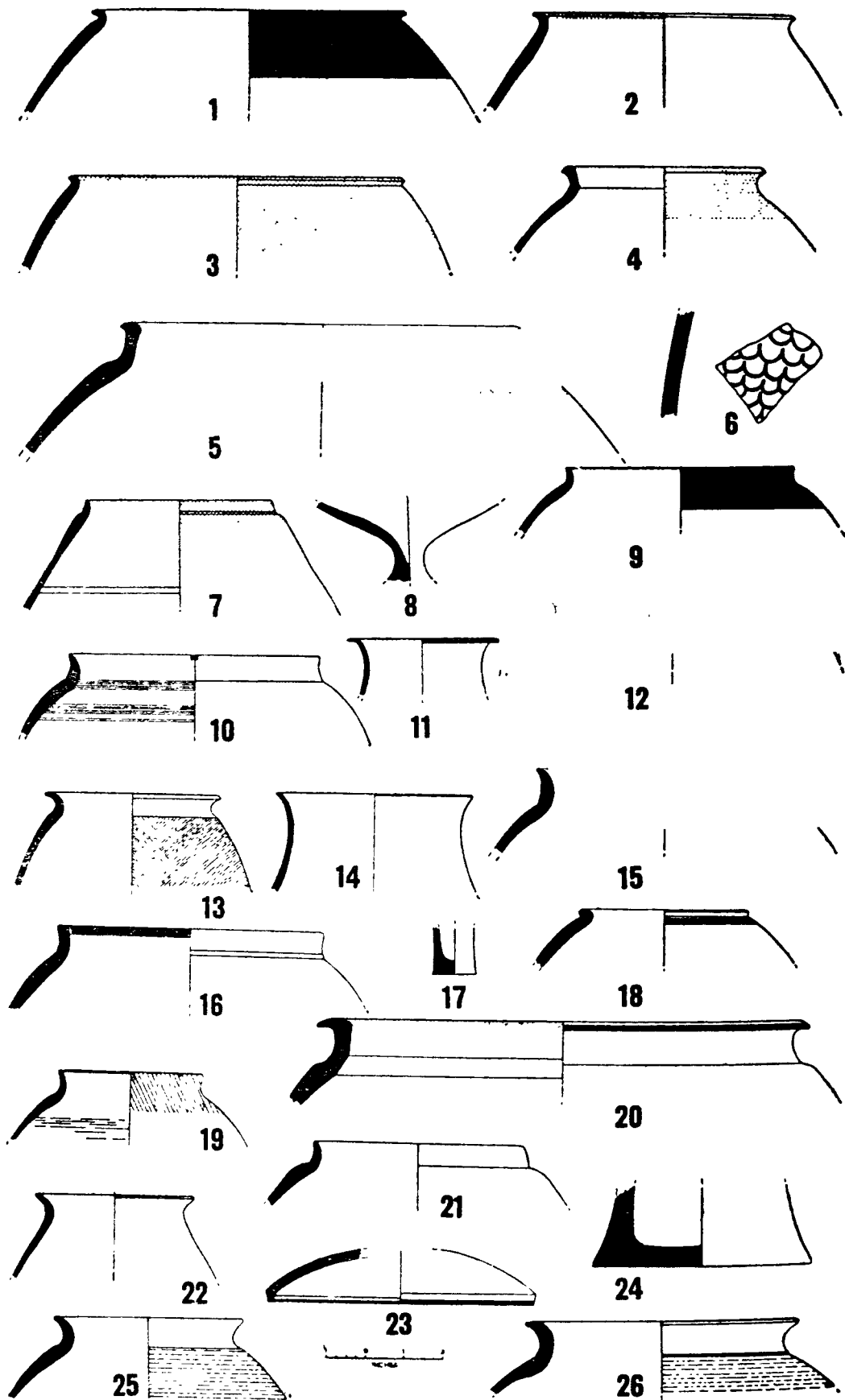


Fig. 25. Pottery from square BIV/6 Layer (5A) —(6)

6. KD, Square BIV/6, Layer (6). A potsherd of light-red ware depicting fish-scale pattern in black over deep red slip.
7. KD, Square BIV/6, Layer (6). Fragment of a vessel with slightly inturned but undercut sharp rim and thick profile near the shoulder. It is painted with deep red-colour around the neck and has rough outer surface.
8. KD, Square BIV/6, Layer (6). A vase of light-red ware having flat pedestalled-base and flaring sides. It shows bright red slip on the outer surface.
9. KD, Square BIV/6, Layer (6). A piece of globular vessel with internally convex featureless rim, painted with black on the exterior surface.
10. KD, Square BIV/6, Layer (6). Fragment of a globular vessel with out-curved undercut rim and grooved interior. It is pale-red ware and treated with light-reddish wash externally.
11. KD, Square BIV/6, Layer (6). Fragment of a small vase with clubbed rim and treated on the outer surface with bright red slip.
12. KD 3950, Square BIV/6, Layer (6). Piece of a globular vessel with-curved rim and thick profile near the shoulder, painted with black externally and near the rim on the inner side.
13. KD Square BIV/6, Layer (6). Fragment of a globular vase with out-curved rim and rough outer surface. It is of pale-red ware and well fired.
14. KD, Square BIV/6, Layer (6). Fragment of a vase of red ware, thin fabric and convex profile.
15. KD, Square BIV/6, Layer (6). Piece of a globular vessel with out-curved and externally under-cut rim. It has thick fabric and painted with black on the outer surface and near the rim internally. (Compare with No. 12 above).
16. KD, Square BIV/6, Layer (5A). Straight featureless rim of a globular vessel of pale-red ware and painted on the inner side with black.
17. KD, Square BIV/6, Layer (5A). A cylindrical vase of light-red ware with flat base and slightly convex profile.
18. KD, Square BIV/6, Layer (5A). Short under-cut rim of a globular vessel, showing horizontally parallel lines painted in black over red slip externally.
19. KD, Square BIV/6, Layer (5A). Small globular vessel with out-curved featureless rim painted with dark brown on the outside and showing thin grooves on the inner side.
20. KD, Square BIV/6, Layer (5A). Lugged-neck of a large jar with beaked-rim. It is treated with bright red slip on the outer surface which is carried over the rim and shows a black line painted horizontally.
21. KD, Square BIV/6, Layer (5A). Fragment of a globular vessel with slightly out-curved rim and thick profile near the shoulder. It is of pale-red ware and shows thin wash on the outer surface.

22. KD, Square BIV/6, Layer (5A). Piece of a vase of light red ware with out-curved rim. It is treated on the outside with pale wash.
23. KD, Square BIV/6, Layer (5A). Fragment of a lid of red ware, treated with deep red slip over which a black line runs near the edge.
24. KD, Square BIV/6, Layer (5A). Flat base of probably a cylindrical vessel, of thick fabric and treated on the outside with pale wash.
25. KD, Square BIV/6, Layer (flA). Piece of globular vessel with out-curved rim and rough outer surface.
26. KD, Square BIV/6, Layer (5A). Fragment of a vessel with-curved pointed rim and carinated neck. It is of light-red ware and has rough outer surface.

Fig. 26.

1. KD, Square BIV/6, Layer (5A). Fragment of a pan of pale-red ware with nail-head rim and painted on the outside with black while on the inner surface shows dark sepia slip.
2. KD, Square BIV/6, Layer (5). Base of a bowl (?) of pale-red ware with flat base, treated on both the inner and outer surface with bright red slip.

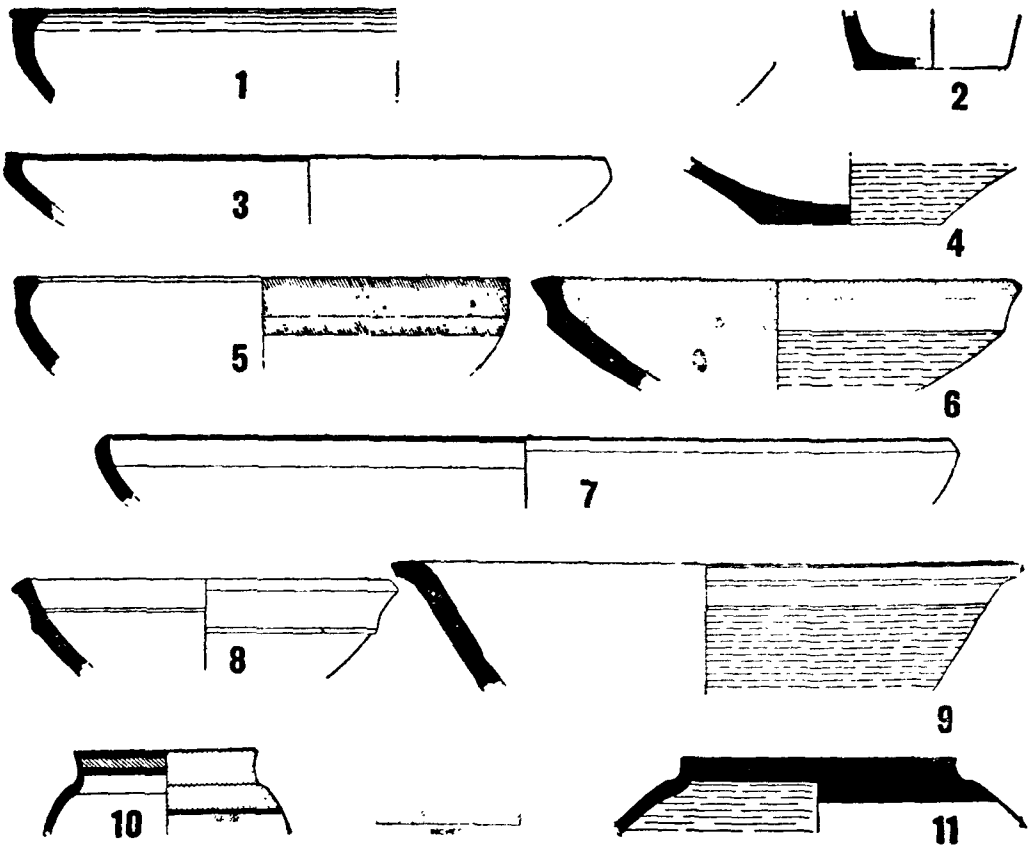


Fig. 26. Pottery from square BIV/6 Layer (5)–(5A)

3. KD, Square BIV/6, Layer (5A). Fragment of a pan (?) with inturned featureless rim on which is painted a black horizontal line. It is treated on both the side with red slip.
4. KD, Square BIV/6, Layer (5). Fragment of a bowl of pale-brownish ware with disc-base and flaring sides. It has rough outer surface and is devoid of any slip or wash.
5. KD, Square BIV/6, Layer (5A). Fragment of a bowl with slightly inturned nail-head rim and painted on the outside with dark brown colour.
6. KD, 3924, Square BIV/6, Layer (5). Fragment of a bowl with carinated neck and nail-head rim. It is of red ware, well fired and is painted near the rim with red on both the inner and outer sides and shows rough outer surface below the neck.
7. KD, Square BIV/6, Layer (5). Rim of a large pan with obliquely cut rim. It is a pale-red ware and treated with dark reddish slip on both the side.
8. KD, Square BIV/6, Layer (5). A bowl of light-red ware with a flang at the neck.
9. KD, Square BIV/6, Layer (5). A bowl of pale-reddish ware with clubbed rim and flaring sides. It has rough outer surface and is treated with pale wash internally.
10. KD, 3947, Square BIV/6, Layer (5). Fragment of a globular vessel with convex featureless rim. A red band is painted on the outside bordered below by a black line while a dark-brown band runs in between two black bands on the inner side of the rim. It is of light-reddish ware and has thin fabric.
11. KD, Square BIV/6, Layer (5). Fragment of a globular vessel with ledged-neck and straight featureless rim. It is an over-fired piece of light-red ware and black bands are painted on both the outer and inner sides around the neck. The inner surface shows a series of thick grooves.

VI. MINOR ANTIQUITIES

(a) HARAPPAN LEVELS

Minor antiquities from the upper levels of the site, that is from layers (1) to (3) of the citadel area and layer (1) of the outer city area, representing the Harappan culture are, as usual, abundant. They include the normal Harappan objects in stone, terracotta, shell, bone and metal, the largest number being in terracotta and stone. The stone objects, mostly tools and implements, also include two steatite seals, polished mace-heads—a notable exception to the Harappan rule—and leaf-shaped arrowheads, while terracotta objects include a few figurines of mother goddesses, more than a dozen animals, plain and painted bangles, triangular 'cakes', beads and toys. In shape, material and workmanship they are identical with typical Harappan specimens, and except for the arrowheads, there is no new feature deserving special mention.

Objects of mixed character representing both the Harappan and the Kot Diji culture were collected from layers (3A) to (3C) above the burnt and charred line on top of layer (4) in the citadel area and layer (2) in the lower city area.

While dealing with the excavations I have already discussed the stone and terracotta objects in some detail. Bronze objects, though few, include blade-axe, arrow-heads, chisels, double and single bangles and finger-rings.

Shell objects represent mainly bangles, both plain and carved, and a number of beads of different shapes. Mother-of-pearls shells, both perforated and plain, with sharp and used edges, are numerous. So also are tiny disc-shaped paste beads, which were frequent in all Harappan levels.

(b) KOT DIJI LEVELS

In the lower levels from layer (4) downwards to layer (16) in the citadel area, and from layer (2) downwards to layer (5) in the outer city area—representing the Kot Diji culture—there is a sharp decrease in minor antiquities. They however provide corroborative evidence of a mature culture with competent artistic and technical skill. In comparison with the Harappan specimens, though the difference in most cases is not striking, in a few objects they show a definite superiority in shape and workmanship.

(i) STONE OBJECTS

Of all the minor antiquities, stone implements are the most numerous. They are almost equally frequent in all layers. The majority of them are thin, long and sharp knife-blades and cores, scrapers and fine micro-blades and their cores. Some of the chert-blades are notched or serrated, which were either used as sickle or saw. Some of the knife blades have a shining edge, showing clearly the signs of long use, probably in reaping. Most of the blades have a notch at the lower end, probably to help in securing them to shafts. A few leaf-shaped arrow-heads are extraordinarily interesting. Stein in his trial excavations at Periano-Ghundai and Kranai sites, in Baluchistan, found one arrowhead on each site. Majumdar also collected one such arrowhead from Pandi Wahi in Sind, which unfortunately was not stratified. Similar arrowheads in stone have been reported from Seistan, but no specimens have ever before been discovered outside Baluchistan and its vicinity.

Grinding-stones and mills, pestles, polished balls and sling-balls comprise

the other stone objects. Semi-precious stone beads do not appear to have been in use before the Harappan period.

In comparison with the Harappan specimens the Kot Diji stone implements are of finer quality. Five micro-blades are limited to period, while long and thin knife-blades are quite common.

(ii) TERRACOTTA OBJECTS.

In the Kot Diji levels, there is a sharp decrease in terracotta objects, which totally disappear in the lowest levels. Only one figurine of a bull—a very interesting one with well developed features, stout muzzle, large round eyes and short pointed horns—has been found. In style it is quite unlike the bull figurines discovered in the Indus Valley or Baluchistan site. It bears a resemblance to the representation of a bull depicted on Susa Scarlet Ware dated 2800 - 2600 B.C. (Pl. LIX, 6). Terracotta bangles, 'cakes' and cores as well as beads were found occasionally in the early levels of Kot Diji. Bangles are both plain and painted. Terracotta balls, marbles and gaming discs made of old potsherds also occur. There are a few heavy netsinkers of cylindrical or barrel shape. Some of the carrot-shaped terracotta cones are painted. It is difficult to explain their use. They are said to be spindle whorls. In Mesopotamia somewhat similar cones were used for decorating the walls. Both the cones and the 'cakes' in the Kot Diji levels are thinner and finer than those of Harappan levels. A number of unbaked 'cakes' and balls have been recovered from very early levels.

(iii) OTHER OBJECTS.

Except a few shell, bangles and beads, a large antler or deer, and one or two mother-of-pearl shells, no other object has been observed.

VII. CHRONOLOGY

(a) HARAPPA AND KOT DIJI CHRONOLOGY

Several finds from Mohenjodaro are assignable to more or less definite dates before and after 2350 B.C. on the analogy of similar datable finds from other sites in western Asia, while excavations in Mesopotamia have yielded seals and other typical Harappa products in strata datable to 2350 B.C. and later, in and after the time of Sargon of Agade. Certain objects are especially noteworthy; such as cylinder seals of Mesopotamian type, but showing the animals peculiar to the Indus region, namely, the elephant,

rhinoceros, and crocodile; seals depicting horned deities, also comparable with deities known from Mesopotamia; knobbed ware, a typical Harappan product found also at Tell Asmar, a fragment of a vessel of light green steatite with a mat-pattern type found in Mesopotamia and elsewhere on sites of the third millennium B.C., etched beads of carnelians; segmented paste beads; disc beads of gold and faience with tubular hole, as discovered in Mesopotamia; rings of shell inlay; and stone incised unguent-boxes as found in Makran and at Mohenjodaro.

The parallels do not necessarily indicate anything more than a trade connection. They are important because they give dating evidence, indicating that the Harappa culture was flourishing before 2350 B.C., and onwards.

If the links between the Harappan culture and the Sumerian civilisation are simply due to trade and do not point to a common origin, then the discovery of the Harappa culture is even more significant because it reveals a high degree of civilisation which developed to perfection in the Indus Valley, and was not merely borrowed from outside.

It seems probable that the Harappans did come into the Indus Valley with a fairly well-developed culture from somewhere, as no traces of the origin of that culture have been revealed by excavations on any of the sites of the Indus Valley, especially at town sites like Harappa, Amri, and Kot Diji, where the waterlogging problem does not exist, and where early Harappan pottery has been found in certain levels in a well-defined stratified layer above a distinct ceramic product.

The plain and painted Harappan pottery unearthed from layers above the Kot Dijian pottery levels suggests the early stages of the former ware, when decoration still remained crude and restricted and the red slip was fugitive and not fast and bright as in the mature phases. These early stages may, at a guess, antedate the well-developed Harappan phases of the upper levels at Kot Diji by as much as two hundred years and thereby date the beginning of Harappan culture of c. 2500 B.C.

Although it is now evident that at Kot Diji before the arrival of the Harappans there flourished a well settled community of highly efficient people for a considerable length of time, whose ruling classes lived in a fortified citadel in houses of sun-dried bricks, who manufactured tools and implements of stone, who were highly skilled in the art of pottery-making, nothing is yet known of their racial and linguistic affinities.

Their highly-developed pottery seems to belong in part to the same general group of ceramic product to which perhaps belongs the Amri ware and the pottery discovered below the defences at Harappa. A case can be made for seeing in some of the pre-Harappan and Amri forms a certain likeness to the Kot Dijian pottery, and if that be admitted then the Kot Diji 'ensemble' could be ascribed to the earlier half of the third millennium. But it must be remembered that this is a provisional dating, subject to confirmation by further evidence.

However, this much can be said, that the II levels of the Kot Dijians must represent some centuries of occupation, on the principle that the 6 building-phases at Harappa and the 10 occupation levels at Mohenjodaro are regarded as the product of five to seven centuries. In one way and another the tentative work at Kot Diji has opened up important and exciting possibilities in regard to the beginning of civilisation in West Pakistan.

(b) CARBON 14 DATING

Since these conclusions regarding chronology and date of Kot Diji were drawn, carbon 14 Test report of four soil samples from different Kot Diji levels which I had sent to the Laboratory of the University of Pennsylvania, U.S.A. have been received, which more or less confirm my dating. The report is given below:

<i>Lab. No.</i>	<i>Description</i>	<i>Age (Years B.P.)</i>
P. 195	Soil sample from sq. BIV/1, Layer (4), thick band of ashy and charred material ...	3925 $\pm$ 134
P. 179	From Locus BV/7, Layer (5) collected 23.II.1957. Sample consisted of sand and charcoal ...	4161 $\pm$ 151
P. 180	From Locus BVI/6, Layer (5) collected 21.II.1957. Sample consisted of sand and charcoal ...	4083 $\pm$ 137
P. 196	Soil sample from deep diggings Sq. BIV/2, Layer (14), Ashy band mixed with charcoal and sand above early foundations of defences ...	4421 $\pm$ 141

EXCAVATIONS AND RECONNAISSANCE IN KALAT

WEST PAKISTAN

THE PREHISTORIC SEQUENCE IN THE SURAB REGION

by

Beatric deCardi, B.A., F.S.A.

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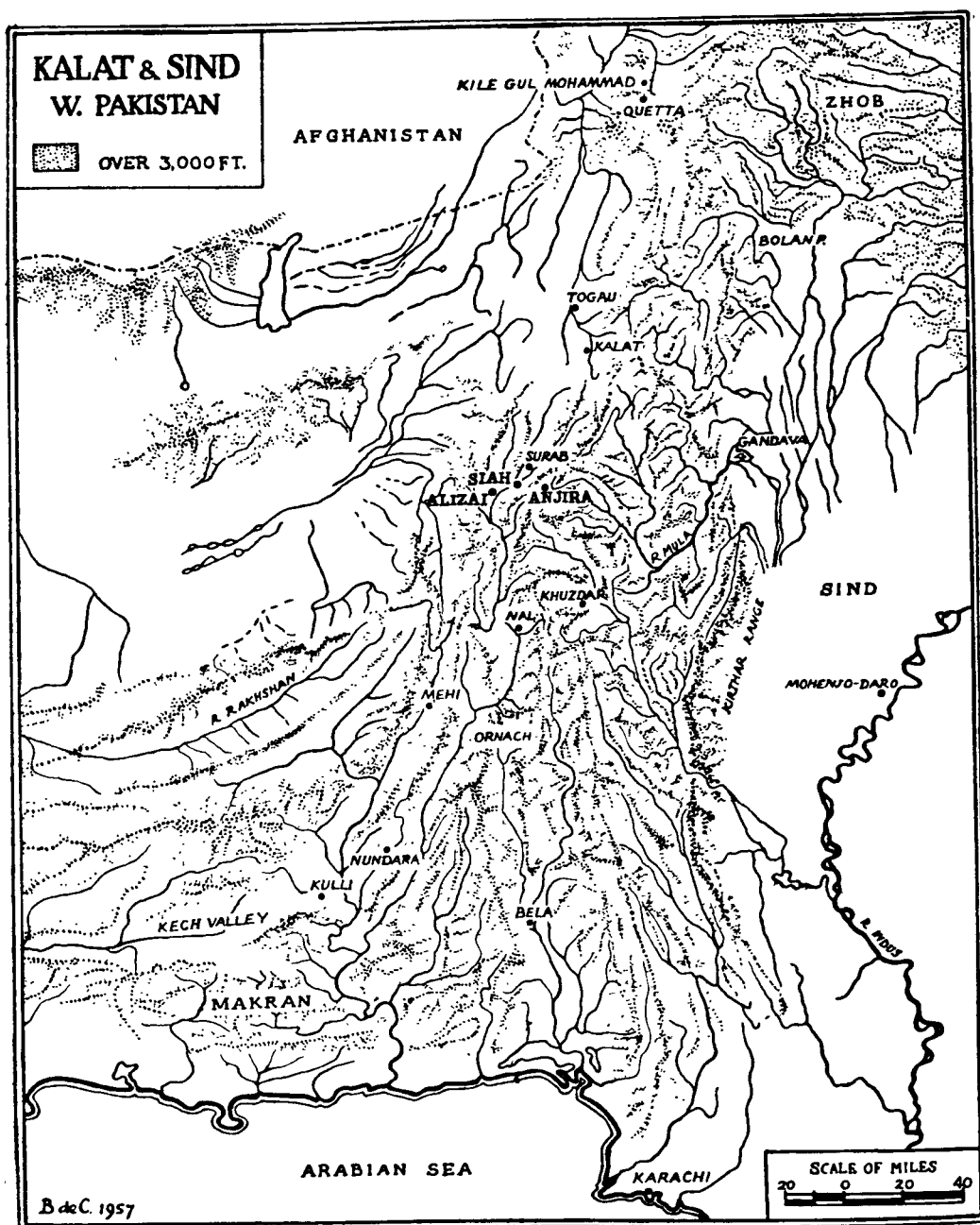


Fig. 1. Map of Kalat showing Arjira and Siah-Damb, Surah

1. INTRODUCTION

The trial-excavations described in this Report form part of a programme of research designed to establish the sequence and define the territorial limits of prehistoric cultures in the region now encompassed by the Kalat Division of the Baluchistan States Union. This Division, created in 1952, includes the former States of Kalat, Kharan, Las Bela and Makran, together with the districts of Chagai and Kachhi. The first part of this Report is concerned with trial-excavations in the region of Surab. The results of the survey undertaken in Sarawan and Jhalawan—with an easterly extension down the Mula River to the Kachhi plain in the vicinity of Gandava—form the second part which will appear in Volume 3.

It is necessary to explain the background against which both the excavations and the survey were undertaken. Sir Aurel Stein had made an extensive survey of archaeological sites along the Kech and Rakhshan valleys in Makran during four months' fieldwork in 1927-28. His survey of Jhalawan, however, was largely restricted to the main routes radiating from Khuzdar, and ended in the south in the neighbourhood of Drakalo, north of the Baran Lak leading to Las Bela. Even more remained to explore in Sarawan, where only sites in the vicinity of the main road from Quetta to Surab appeared to have been recorded when my first survey was undertaken in 1948.

The immediate purpose of that survey was to examine the distribution of a prehistoric ware first noted in the Quetta valley. As a result of three weeks' fieldwork it was possible to extend the southerly limits of the Quetta culture by 120 miles and to identify it on a dozen new sites. That in itself was satisfactory, but the great variety of different and apparently unrelated wares collected during that survey made it clear how little was known of the prehistory of Kalat. Many of these wares were characterised by distinctive patterns which, in the absence of scientific excavation in Baluchistan, prompted stylistic comparison with pottery found in Iran and Iraq where a sound chronology had been established by excavation. The hazards and limitations of stylistic analysis are obvious and trial-excavation on selected sites was needed if wares unknown outside Baluchistan were to be fitted into the chronological framework.

A start was made in 1950-51 when the American Museum of Natural History, New York, sponsored a programme of research in the Zhob and Quetta valleys under the direction of Dr. Walter A. Fairservis, Jr. On

Kile Gul Mohammed, a mound 4 miles north-west of Quetta, four stages of an early prehistoric culture were noted and although the excavations failed to relate the final period with the Quetta culture stratigraphically, a link was provided by a bichrome ware named Kechi Beg, which occurred both in a late level in Kile Gul Mohammed IV and in the pre and early Quetta culture levels (Damb Sadaat I) at Mian Ghundai, a mound 10 miles south of Quetta. The Quetta culture was there shown to have continued through two periods and signs of change or possibly intrusive elements were evident in the final occupation of the site at the beginning of the second millennium B.C.

The next stage clearly was to see whether the Quetta sequence could be applied, either wholly or in part, to sites in central Kalat. My preliminary survey had shown the spread of the Kile Gul Mohammed culture as far south as Surab, and the purpose of my excavations in 1957 was to establish the chronology of that region as a springboard for future investigations further south in Las Bela and westwards in Makran.

Three sites were selected for examination in the Surab region. Trial-excavations at Anjira established a prehistoric sequence later confirmed at Siah-damb, a site 12 miles to the north-west. The results of these excavations are given in the first part of this Report.

The expedition carried out in 1957 was sponsored by the Royal Asiatic Society and was made possible by generous support from many quarters. Substantial grants were made by the Leverhulme Research Fellowship, the Pilgrim Trust and the British Academy, the Society of Antiquaries of London, the Russell Trust and the Central Research Fund of the University of London. I would also acknowledge a grant from the Marc Fitch Fund to cover the reproduction of drawings and photographs illustrating this Report.¹

The small expedition which set out overland on the 30th June, 1957, consisted of Dr. D.H. Trump, with whom I shared the direction of the trial-excavations, Mr. George Barrington, M.C., and Miss A.H. Fawell, who acted as second driver on the outward journey but returned to England when the party reached Quetta on 22nd July. The major responsibilities for keeping the expedition in the field lay with Mr. Barrington who combined

1. The Royal Geographical Society lent surveying equipment; the Ministry of Food, Agriculture and Fisheries gave much assistance in regard to dehydrated supplies, and gifts of food and equipment were received from British Ropes Ltd., Cerebos, Ltd., Frank Cooper, Ltd., Cow & Gate, Ltd., Dunlop Rubber Co., Ltd., Knorr Food Products, Lyte Ladders, Ltd., and the Nestle Co., Ltd.

the duties of interpreter and driver with the organisation of our daily needs. Despite persistent ill-health and against medical advice, he remained with the expedition throughout, and the success of our mission owes much to the skill and determination with which he kept our one vehicle in good condition over 17,000 miles of often very rough country. In Kalat we were joined by two members of the Department of Archaeology, Pakistan, Mr. Harunur Rashid, whose collaboration in the field was most welcome, and Mr. Mahfooz Ali, draughtsman. From its inception in 1947, the Department has been aware of the importance of fieldwork in Baluchistan. Both then and later, its Directors, Monsieur Raoul Curiel and his successor, Dr. F.A. Khan, have afforded me every assistance.

I also owe much to the kindness of many other officials. My request for permission to carry out research in Kalat was supported by His Excellency, the late Mr. M. Ikramullah, then High Commissioner for Pakistan in the United Kingdom. Mr. M. H. Sufi, Commissioner, Kalat, provided valuable introductions to officials in the district. In Surab, any problems which arose in connection with labour, animal transport or supplies were always speedily overcome through the efficiency and kindness of the Tehsildar, Mirza Rahimtulla Khan, whose friendship and interest in our work all members of the expedition will long remember.

In conclusion, it remains to acknowledge my debt to Sir Mortimer Wheeler and Professor Stuart Piggott. They encouraged my first survey and supported my subsequent proposals for research in Kalat. In the preparation of this Report I have welcomed the comments and advice of Professor M.E.L. Mallowan on the pottery, of the late Colonel D.H. Gordon on the chert implements and Miss M. Bimson, British Museum Laboratory, who has examined some of the ceramics. Mr. A. Ghosh, Director General of Archaeology in India, has kindly allowed me to see the unpublished text of a report by Dr. D.E. McCown on the pottery found during Sir Aurel Stein's survey in Las Bela.

2. EXCAVATIONS NEAR SURAB

Fieldwork in Kalat inevitably hinges upon maps (Fig. 1), and a study of physical geography, combined where possible with air-photography, is essential since the conditions which govern man's choice of settlement-site and route can have changed little in the past five thousand years. Then, as now, traffic will have flowed along certain well-defined channels. It is necessary to mention only the major lines of communication at this stage:

routes through the Kirthar range to the Indus plain will be described in detail in the second part of this Report.

Kalat forms the eastern extension of the Iranian plateau. In the north, the mountains of Sarawan rise to about 8,000 ft., their narrow parallel valleys providing relatively easy access except for transverse travel from east to west. South of Surab, the hills spread out like the fingers of a hand and communications follow the valleys. In the south-west the Kech and Rakhshan rivers form the main east-west routes; the Khuzdar-Nal-Turbat route follows the Mashkai river into the Kolwa and Kech valleys and the Surab-Panjgur road lies between the central Makran and Siahan ranges. Further north another parallel route from Quetta to Zahidan skirts the Helmund desert.

In the south-east a succession of ranges run roughly parallel to the Kirthar hills which rise abruptly from the Indus plain between Sind and Jhalawan. Of the various routes through the Kirthar range, the most important follows the Mula river from the region of Kach-Gandava to Nar, where the track bifurcates, one branch leading south-west to Khuzdar, the other joining the main Quetta-Khuzdar road near Anjira. South of Khuzdar the main route lies over the Baran Lak to Las Bela.

As the focal point of communications in central Kalat, the area between Surab and Khuzdar was the obvious choice for investigation since occupation-sites in that locality were likely to afford evidence of wider cultural contacts than might be found in remoter regions. The 1947 survey had shown a concentration of prehistoric and later settlements south of Surab, with an important site at Anjira, 16 miles to the south-east. Surface sherds on these sites indicated occupation by users of Kile Gul Mohammed, Togau, Nal and Londo wares, and it seemed probable that trial-excavation on several of these sites would provide a sequence which could be related to that proposed for the Quetta valley.

Tegak and Haddi, two small mounds about 11 miles south-west of Surab, had originally been selected as they had been easily accessible when visited in 1947. When the expedition reached Surab ten years later, however, the old road had been swept away by recent floods and the alternative route lay well to the west of the sites which were now surrounded by dykes and field boundaries and virtually impossible to reach by car. A start was therefore made at Anjira which lay close to the main Surab-Khuzdar road. When a sequence had been established there, we broke camp and returned to Surab. After further reconnaissance Siah-Damb, a mound at the head

of the Surab valley, was chosen for further trial-excavation in order to confirm and amplify the evidence of Anjira.

3. SUMMARY OF RESULTS

Trial-excavations at Anjira and Siah-damb, Surab, established the following cultural sequence:—

Period I. A Neolithic occupation derived probably from the Sialk culture of Iran (see, p. 116). At Anjira a semi-nomadic settlement could be related to Period II of the Kile Gul Mohammed culture (the upper level of K.G.M. had a C.14 range of 3500-3100 B.C.). Material was scanty but included red-slipped pottery and chert implements representing a flake-blade industry comparable to that of Sialk I-III (see, p. 130).

Period II. Continued occupation, with permanent settlement attested by mud-brick buildings on boulder foundations. The cultural assemblage corresponded to Kile Gul Mohammed II-III and included the red-slipped burnished ware associated with that culture, a pedestal-base in a grey burnished ware unknown in Baluchistan, and coarse vessels moulded inside basketry frames. The discovery of two horns, presumably detached from a small bull figurine, is of interest since such objects have not hitherto been associated with the Kile Gul Mohammed culture.

Period III. A transitional period marked by the appearance of new architectural styles and ceramics. At Anjira roughly squared stone replaced the boulder foundations of Period II. The ceramic sequence in Siah, Trench II, showed that Kile Gul Mohammed and basket-marked wares were common in Phase i, where they were associated with new wares—Togau and a bichrome ware of Amri-Kechi Beg type. The earlier wares had virtually ceased by Phase ii. This phase marked the building of a massive 'podium' at Siah, later destroyed and replaced in Phase iii by domestic buildings with which were associated Zari-ware and fine cream-slipped pottery decorated with geometric patterns for the most part though some animal designs and a little true polychrome serve to identify the ware as a local variant of the Nal culture. Three stages in the devolution of the Togau frieze could be demonstrated stratigraphically through Phases i-iii, beginning with Stage B. From the occurrence of Amri-Kechi Beg wares, the beginning of this period is best related to the end of Kile Gul Mohammed IV and to Damb Sadaat I.

Period IV. A period which coincided in part with the Quetta culture

occupation of Damb Sadaat II. At Anjira it was marked by expansion and rebuilding with well squared masonry replacing the rougher stonework of the previous period. Fine Nal wares were predominantly cream-slipped and were decorated with polychrome or bichrome designs of great variety, in zoomorphic, naturalistic and geometric styles. A cordoned colourcoated ware (Anjira-ware) was used for heavier domestic vessels together with a granulated ware. Anjira-ware provides a link with the Kulli culture since it occurred in the Kulli levels at Shahi Tump with a pottery hut-urn of late Akkadian type, c.2000 B.C. (see, p. 170).

Period V. While erosion had removed the stratigraphical evidence, the presence in superficial layers of Periano Wet and Reserved Slip wares and designs of Rana Ghundai III C style points to contact with, if not the arrival of, a people whose advent in northern Baluchistan can be assigned to about the beginning of the second millennium B.C. Their culture can be recognised in the final period at Damb Sadaat, and at Mundigak, Afghanistan, in Period IV, 2-3.

4. ANJIRA: ACCOUNT OF TRIAL-EXCAVATIONS¹

The ancient site, a large mound (Map 34L, VD1993), lies between two arms of the Anjira River, a tributary of the upper Mula. It stands immediately to the west of the Surab-Khuzdar road, 16 miles south of Surab and about 5 miles north of the great gabarbund of Lakhurian. The mound is not immediately conspicuous since it lies, not in the centre of the open plain like the small modern village of the same name, but in the mouth of a valley running into it, and is barely distinguishable from the hills which enclose the plain on the west (Pl. II,a). It was discovered during the 1947 survey when occupation-layers and masonry were noted in the natural section cut by flood-waters. The site was clearly one of considerable importance commanding the junction of the main north-south road with the northern branch of the Mula route from Sind, and a track westwards through the hills to Gidar and the Panjgur road.

The *damb* measures 750 feet along the axis roughly parallel to the road (plan, fig. 2), and about 350 feet from east to west. Its breadth was probably once much greater, but a considerable part of the site has been swept away leaving cliffs of up to 27 feet in height (Pl. III,a). The highest point on the mound is only 8 feet above this level. The first 14 feet consist of natural

1. I am greatly indebted to Dr. D. H. Trump for his help in preparing the account of the excavations.

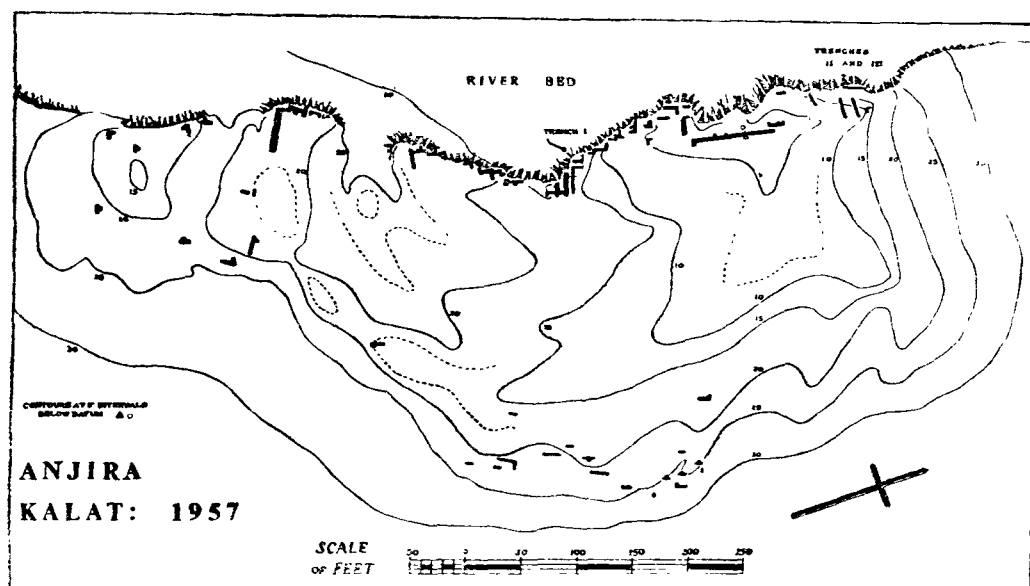


Fig. 2. Anjira: plan

river gravels, representing the low hillocks on which the earliest inhabitants camped. Very similar mounds, with no trace of human occupation, were found elsewhere in the neighbourhood. The remaining 21 feet are due to the gradual accumulation of cultural debris, primarily the mud-brick of the houses.

Beyond the river to the west were found stretches of good stone masonry, with a scatter of sherds, suggesting that occupation once spread well beyond the limits of the mound to that side. Sherds alone extended some way towards the east, but since surface drainage flows in that direction, they could well have been deposited by natural means. Near a *karez* which taps the gravels of the side valley and debouches about 120 yards to the north is a well of squared stones, $3\frac{1}{2}$ feet in diameter (Pl. III, b), the masonry recalling that used in the upper levels of the site. Even less clearly associated with the occupation on the mound were a number of rough cairns on either side of the modern road to the east. These were of two types; one consisting of a circular stone wall with entrance to the west (Pl. IV, a), the other, a circular platform of stones. One of each variety was opened. The stones lay directly upon the natural gravel and no trace was found of a funerary deposit or any sign that there had ever been one.

The surface of the main mound was composed of loose stones of small size, with frequent traces of stone masonry. A particularly long stretch of walling could be traced over 52 feet on the summit of the mound, representing a building of considerable size. These walls were most noticeable

where they were exposed in the river cliffs (Pl. III, a). Below the general level of the well-squared masonry, a smaller number of walls built of rounded riverine boulders could be clearly distinguished in the central section of the mound, and it was mainly in the hope of finding cultural material associated with these two building phases that the trenches were opened.

DESCRIPTION OF THE CUTTINGS

TRENCH I

The first trench was cut in the angle between the main cliff face and a small erosion gully at the southern edge of the central block, still well

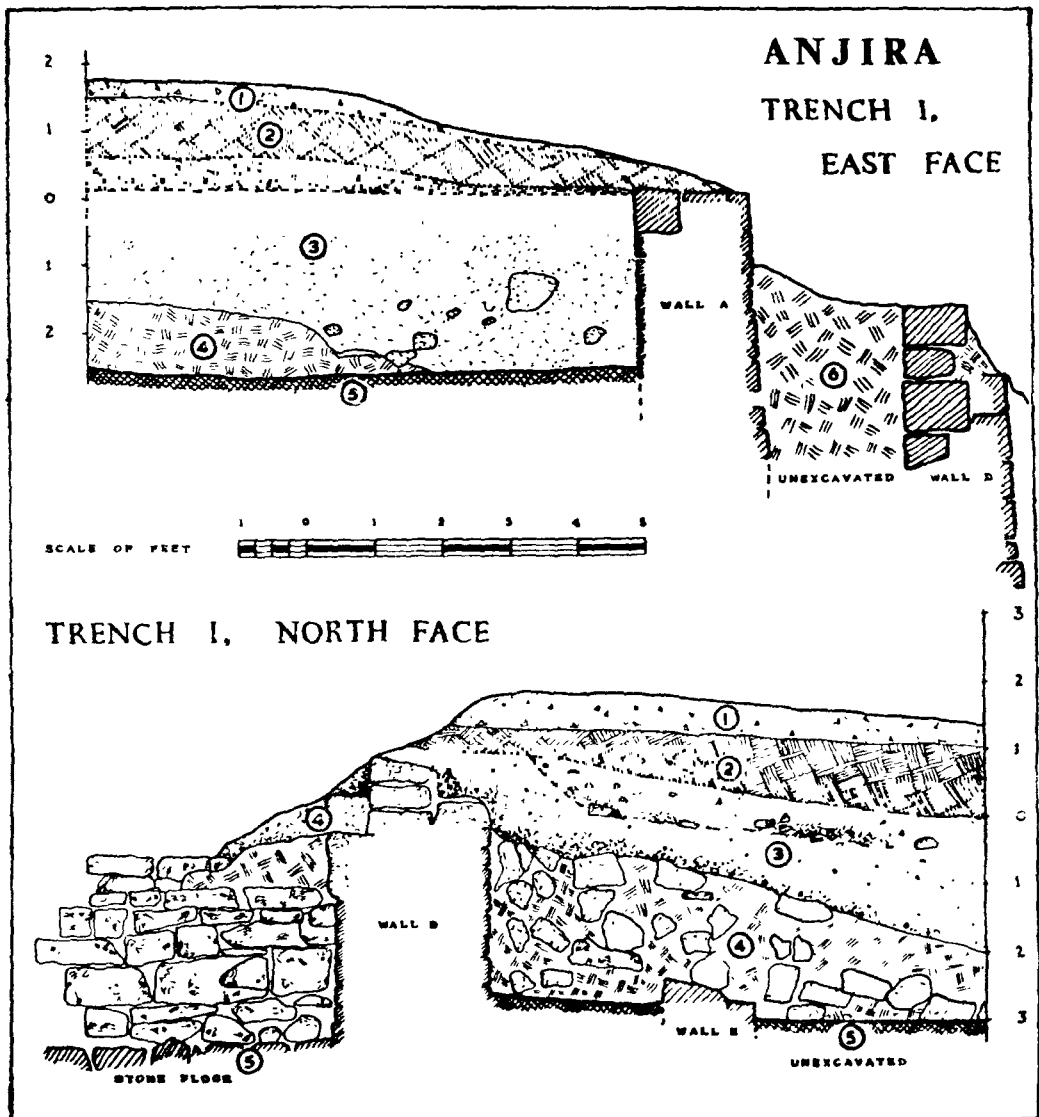


Fig. 3. Anjira; Trench I, sections of North and East faces

within the limits of the main mound. Here two walls, joining at right-angles, were visible on the surface and the trench was sited to clear a quadrant of the room between them. The north and east walls of the trench each measured 13 feet, the rough enclosing line of the triangle being formed by the scarp slope to the river bed.

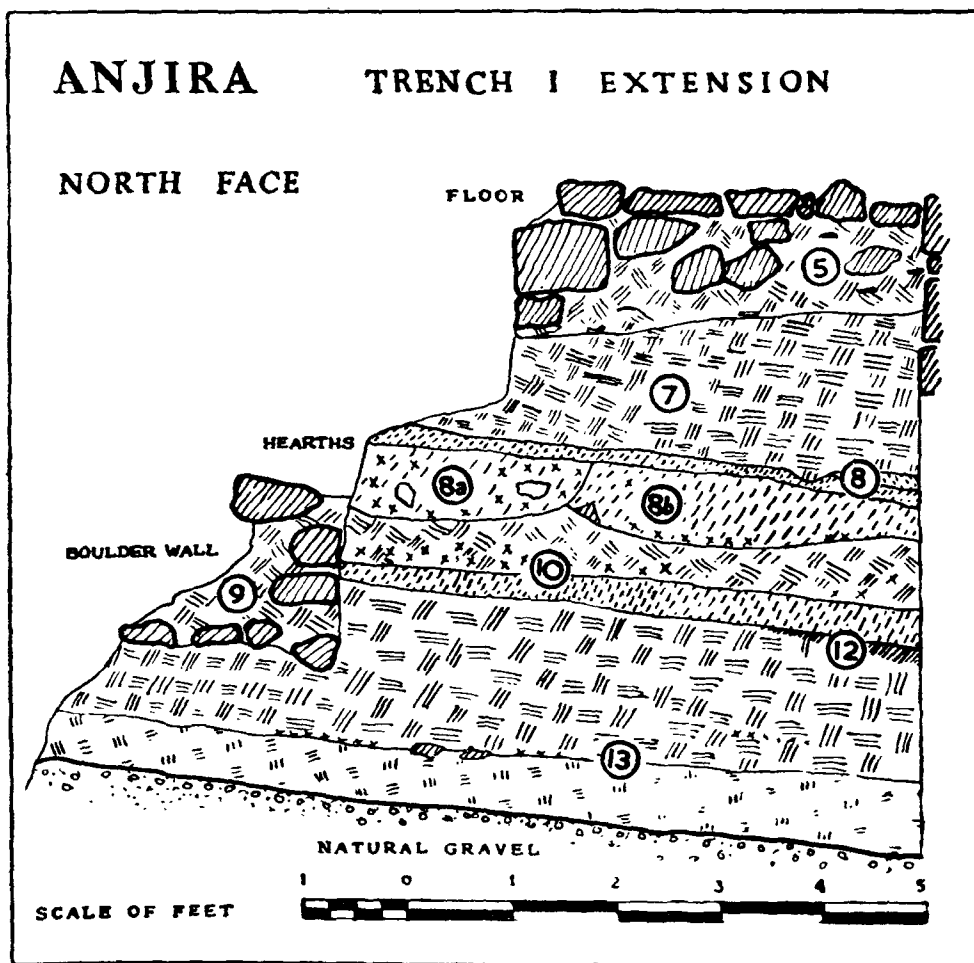


Fig. 4. Anjira: Trench I extension, section of East face

The trench was dug in two stages. In the first it was carried down to the occupation-level of the walls visible on the surface, and some 4 feet beneath it (Fig. 3). The layers here followed each other in orderly sequence as shown on the sections, and need little explanation. Layer 1 was a superficial deposit. Layer 4 was composed largely of the collapsed mud-brick upperwork of wall B, a little of which had remained in position, showing that only the first 2 feet above floor-level were built in stone (Pl. IV,b). Wall E (Pl. V,a), being a light internal structure, had left no trace of its fallen debris in the section. The brickwork of wall A must have collapsed

outwards into the corridor, but the percolation of water had disturbed the stratigraphy too much to show this clearly, layer 6. Work was stopped on the surface of layer 5, a good beaten earth floor, since the unexpected appearance of the cross-wall E had left too little space for further progress without the demolition of the walls already found. The small triangle between walls B and C was then cleared to a cobbled floor at the same level. (Pl. I).

In order to reach the earlier levels, part of the cobbled floor was lifted, leaving only a 10 feet strip against wall C to show in the section. This again gave a triangular trench, 4 feet along its north face, 5 feet to the east, with the third side open onto the cliff-face as before. Beneath the foundations of the floor, the soil changed suddenly to a soft, uniform yellow or grey, with very few stones or sherds in it. Different levels could be distinguished, particularly the hearths 8a and 8b (Fig. 4) with much charcoal and, in the latter, apparently an internal lining of stones, but the character of the soil was the same right down to the natural at a depth of 6 feet below the pavement. This consisted of orange river gravel, completely sterile and undisturbed except by a few small animal burrows. One of the lower boulder walls was cut by the scarp slope in the north section. It was badly damaged, and though layers 8, 10 and 13 were all cut by it, erosion had destroyed the evidence for the relationship between the wall and layer 7.

TRENCH 11

The difficulties of working in the main cliff-face at its highest were such that a boulder wall was sought on the northern side of the mound, where the slope to the river was less precipitous, and a rectangular trench, 14 feet from north to south, was dug to investigate it, aligned on a wall of later type on its northern side. Natural gravel was reached at a depth of 6 feet (Fig. 5) at the upper end of the trench, and ran horizontally to outcrop on the slope of the hill some 14 feet to the west.

Disregarding the superficial layer 1, a clear and wide foundation-trench was visible behind the dressed-stone wall A. On the south side of the trench, the mud-brick superstructure of the boulder wall B appeared though in a much disintegrated state; the quality of the masonry was also inferior. This wall crossed the south-east corner of the trench diagonally, the space behind it being rendered unworkable by reason of a cross-wall of the same build which joined B at right-angles at that side. Banked against the front of wall B, and cut by the foundation-trench of wall A, were a number of

ANJIRA TRENCH II, EAST FACE

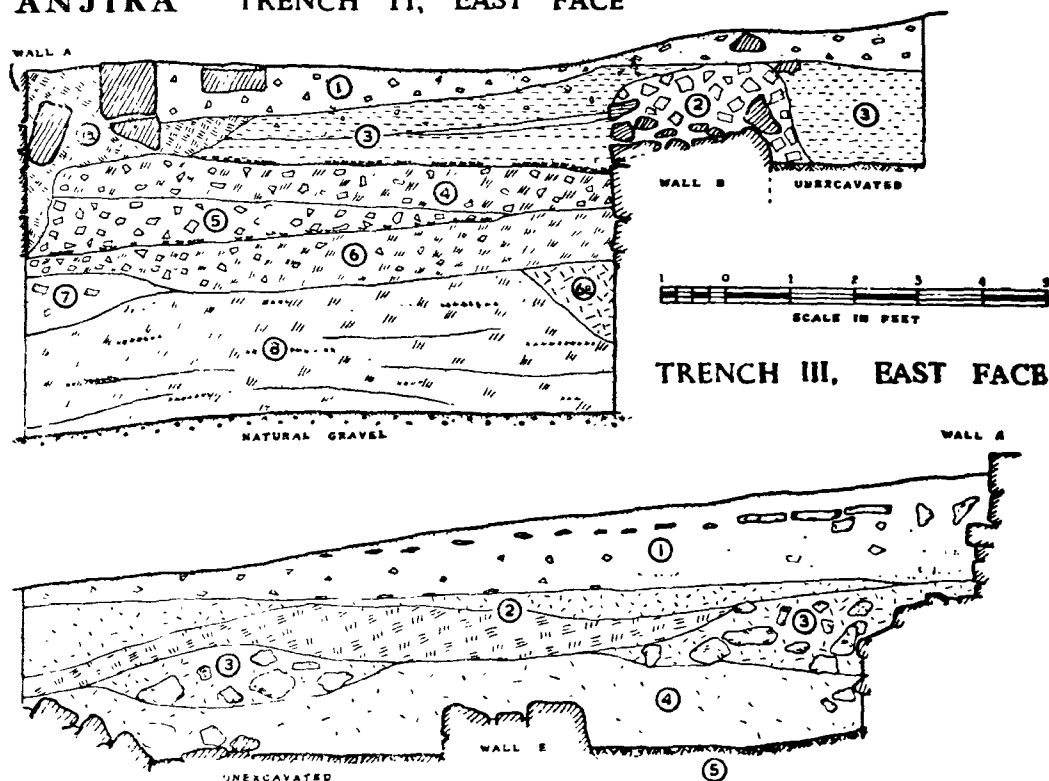


Fig. 5. Anjira: Trenches II and III, sections of East faces

horizontal layers of varying constitution, all stony. The last associated with wall B was level 6a, a rubble-filled trench serving as a solid foundation to it. Below this was ashy material similar to that of the lowest levels in Trench I, lying directly on the natural gravel.

TRENCH III

Since all but the superficial layer in Trench II had contained the same material as the lower extension of Trench I, the third trench was laid out immediately upon the slope from the former to examine the later levels. Trench III was cut a foot wider than Trench II to follow the face of a prominent squared-stone wall parallel to that in the lower trench. It was carried down about 4 feet to the level of a rough floor associated with wall E, and produced a considerable quantity of material similar to that found in the uppermost layer of the lower trench, though still about $1\frac{1}{2}$ feet higher than the latter. Neither the wall fragments found nor the section (Fig. 5) calls for further comment. In this trench the dip of the layers towards the north became more apparent.

OTHER CUTTINGS

In seeking a suitable position for the second trench, a small part of the cliff-face was scraped beside another boulder wall low in the centre of the site. It confirmed the impossibility of working a large trench in that area, and provided further evidence of the variety of wares associated with the early masonry (see below, p. 105).

A stretch of walling on the lip of the cliff above was cleared to show the structure of the late masonry (Pl. V, b). The associated pottery was of the same kinds as those from the upper part of Trench I.

THE CULTURAL SEQUENCE AT ANJIRA

The occupation of the site appears to have been continuous and falls into four periods. A fifth period is suggested by surface finds but erosion had destroyed the stratigraphical evidence.

Period I. A semi-nomadic encampment of the Kile Gul Mohammed culture, with occupation extending to between 2—2½ feet above the natural gravel. This period can be equated with Period II on the type-site.

Period II. A permanent Kile Gul Mohammed settlement, extending to a further height of 3 feet. The cultural assemblage is comparable to that of Kile Gul Mohammed II-III.

Period III. An intermediate period, marked by different architectural styles and the appearance of Togau and Amri-Kechi Beg bichrome ware suggests contact with new cultural groups. The deposit measured only about 1½ feet but the continuation of Period II wares implies a certain measure of contemporaneity.

Period IV. A period of expansion and rebuilding, ascribable to a local variant of the Nal culture, extending to the surface, a further height of 5 feet or more.

Period V. Sherds in superficial layers pointed to contact with, if not the arrival of, people associated with the Sadaat III and Rana Ghundai IIIC periods in northern Baluchistan.

Anjira Period I. The earliest settlement on the site was represented by layers lying immediately upon the natural gravel and containing no sign of structures in stone or brick. They consisted largely of ashy earth with

few stones; probably the domestic rubbish of a nomadic community. Since the area examined was extremely limited, the absence of post-holes should not be taken as ruling out the use of flimsy matting shelters supported on light untrimmed boughs comparable to those used in semi-nomadic encampments in Kalat at the present time. The pottery was of a fine, wheel-turned, buff ware, often with a red slip and occasionally highly burnished. It was either plain or decorated with black painted motifs and identifiable as Kile Gul Mohammed ware. A few sherds of well-made grey and dark-tan burnished wares were also found. Chert flakes were common and included a few fine lunate microliths and many flakes. Animal bones, mainly those of cattle and sheep, were common and some had been worked to serve as awls, a spatula and a small bead.

This assemblage appeared in Trench I, 10-13, Trench II, 8 (see sections, Figs. 4-5). The trenches mark the approximate northward and southward limits of this material.

Anjira Period II. Immediately above were layers associated with the boulder walls, notably B in Trench II. This was faced on both sides with river boulders averaging 8 inches either way, roughly laid, with a central core of smaller stones of 3-4 inches maximum length. This footing rose for about 2 feet, above which it was continued in mud-brick. Apart from this evidence of permanent occupation, the layers were similar in content to those of Period I and were comparatively stoneless with much ash. They contained the same types of pottery, with the addition of a substantial proportion of cream-surfaced hand-made and basket-marked wares, ranging from a quarter to a half of the total number of sherds found. A buff ware of inferior fabric and often sandy base may be a variant of Kile Gul Mohammed ware and a burnished tan ware could with more certainty be assigned to that culture from its painted decoration. Of particular interest was a bowl with high pedestal foot (Pl. VI, a and b) in a very fine grey burnished ware, decorated with punctate hatching set diagonally and horizontally within triangular zones in a style and ware unknown in western Pakistan. Several undecorated sherds of the same ware occurred with it. A single sherd of Togau, stage C, was found in Trench II, 5, and may be intrusive. Chert implements of the same type as noted in Period I were found in the debris with animal bones. Small finds included a shell or bone bead and two clay horns detached from a small bull figurine.

Period II occupation was represented in Trench I, 7-9, Trench II, 2-7, and in the deposit examined low in the cliff-face. They covered much the same area of the site as in the previous period.

Anjira Period III. A very distinct change was noted in this period. The layers contained a higher proportion of decayed walls to purely domestic refuse and the construction of the walls altered considerably. Roughly squared stone replaced the rounded boulders, and larger blocks were used, dispensing with, to a large extent, the loose rubble filling (note wall E, Trench III). None of the walls uncovered stood sufficiently high to show the change to mudbrick, but collapsed debris in the filling and its presence in both earlier and later periods, were sufficiently conclusive.

The wares of Period III included those already noted in the previous period, basket-marked sherds being the most common. Togau-ware occurred sparsely, and included one example of Stage A. Other wares new to this period fall within the Amri-Kechi Beg and the Nundara-Nal cultural groups. They included plain and bichrome wares, with designs ranging from geometric patterns on a greyish-white ground classed for purposes of identification as Zari-ware, to zoomorphic motifs featuring spotted animals. A few sherds of a heavier, granulated ware and a colour-coated and often cordoned ware, described below (p. 177) as Anjira-ware, were also noted. Chert implements had disappeared completely, and their absence, combined with the discovery of a whetstone may signify the introduction of metal during this period.

Trench III, 4-5, contained material related to this period. Trench II, 1-12, contained similar material, the former in a superficial deposit, the latter too scanty to give a secure date for wall A, of which it was the foundation-trench. In the area of Trench I, the construction of the period IV buildings had apparently destroyed all the evidence, lying as they did directly over period II layers. Owing to the difficulty of distinguishing these levels from later surface deposits, the area of the settlement in Period III is unknown. It may only have covered the summit and northern slope, with possibly an extension to the east. Its absence in Trench I is inconclusive, though it was noticed that sherds characteristic of this period, and found in no other, were absent from the southern end of the site.

Anjira Period IV. A period of rebuilding and great expansion in which the settlement spread to the south and west. The characteristic feature was the use of fine squared masonry walls. The size of the blocks used was more variable, but each was well-shaped, and there was a clear tendency to coursing. The main facing blocks accounted for the whole thickness of the wall. The stone work changed to mudbrick about 2 feet above floor-level, and extended as foundations for the same distance below. The complex

of walls in the upper part of Trench I were of this type, as was the masonry cleared on top of the cliff, A in Trench III, and probably A in Trench II (its construction puts it clearly in this period though the habitation-levels corresponding with it were not found and its foundation-trench contained only a very small quantity of material of period III type).

Since permission was restricted to trial-trenching, it was not possible to recover the complete plan of any of the houses, but insofar as their walls could be traced on the surface, they appeared to be composed of narrow rectangular rooms measuring about 10 by 20 feet. A stone door-slab marked the end of the corridor, $2\frac{1}{2}$ feet wide, within the room partially excavated in Trench I, and a stone-paved floor added to the amenities of life within an orderly and well-planned, if over-crowded, settlement.

The characteristic pottery of Period IV was the colour-coated Anjira-ware, either cordoned, combed or ribbed, and Nal bichrome and monochrome wares, with several styles of decoration. Apart from a single sherd of Zari and Togau-wares, the pottery of the lower levels had died out completely, A sherd of Quetta Wet ware (Trench 1, 3) may be intrusive, but its occurrence in a level which contained sherds reminiscent of Rana Ghundai IIIC may have significance in the light of Period V.

There was again no sign of chert tools, though stone was put to several other uses. Artifacts included door-sockets, a stone with a ground circular pit on which the door would swivel, large pulley-wheels, and a few quernstones.

The upper part of Trench I, 2-6, belonged to this period, as did layers 2 and 3 of Trench III and the wall clearing at the lip of the cliff.

Anjira Period V. Among the sherds found in superficial layers in Trenches I and III and the wall clearing, and scattered on the surface, were types found only rarely in undisturbed deposits. These must represent an ill-defined Period V, of which some material has survived the destruction by erosion of the layers where it was present. Nothing further can safely be said of it since the evidence is almost entirely destroyed, apart from noting that the wares most commonly found—Faiz Mohammad Grayware, Quetta and Periano Wet wares and Periano Reserve Slip ware—suggest that, as at Nal, there may have been a small settlement of Rana Ghundai IIIC or allied folk.

5. TRIAL-EXCAVATIONS AT SIAH-DAMB,¹ SURAB

The second site investigated, Siah-damb (Map 34L, QY0607), lies near

1. Care must be taken in referring to this site to differentiate between it and Siah-Dambs of Nundara and Jhau.

the east bank of the Rej River, 5 miles south-west of Surab (Fig. 1). It is a conspicuous mound (Pl. VI,a), standing well out in the plain by the old road leading to Gidar, but near enough to the northern end of the valley to command the gaps which open into it at that point from Surab and the north, and Anjira and the east. Field survey in that area had resulted in the discovery of 14 other sites, including 3 large settlements and small sites which were contemporary with the occupation of Siah.

The mound is roughly 400 feet square and its height of nearly 40 feet is almost wholly of artificial origin (Fig. 6). The natural soil is river gravel similar to that at Anjira, though tending to be more silty. There are a number of small hummocks of natural origin nearby, and one of these probably formed the basis of the mound, now completely hidden by cultural debris.

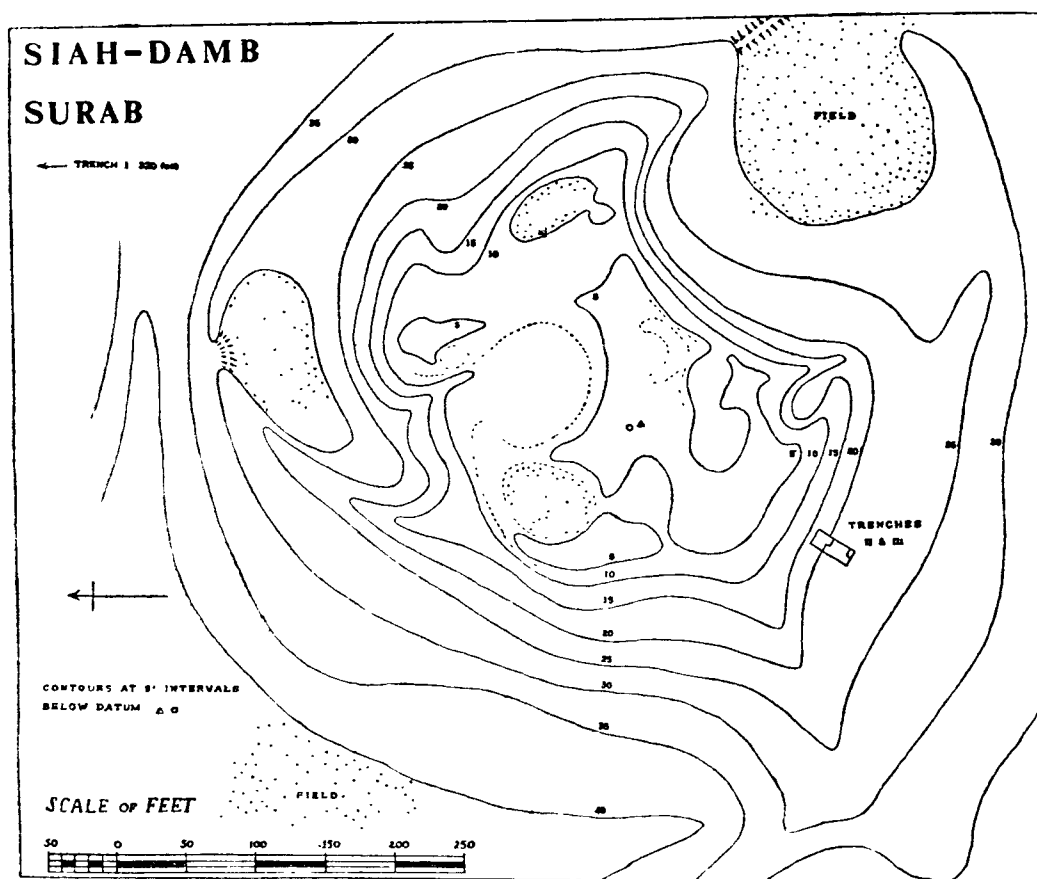


Fig. 6. Siah-damb, Surab: plan

The surface of the mound was stony with rubble on the steeper slopes, but small pockets of silt filling the depressions on the higher ground and

cultivated in the same way as the *khuskaba* fields in the neighbourhood. There are occasional traces of poor stone masonry on the lip of the site.

TRENCH I (Fig. 7)

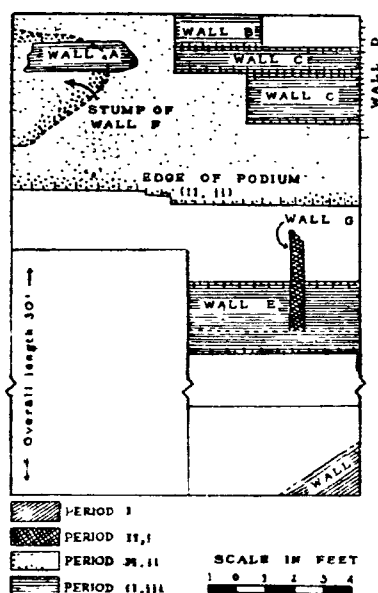
The first trench dug at Siah measured 6 feet by 10 feet, and was sited on a low spur to the north of the main mound where a scatter of sherds suggested early occupation. A line of large stones on the surface marked one edge of the trench but excavation to a depth of 4 feet revealed no sign

SIAH-DAMB

TRENCH III EAST FACE

SURAB

TRENCH II PLAN



TRENCH I, WEST FACE

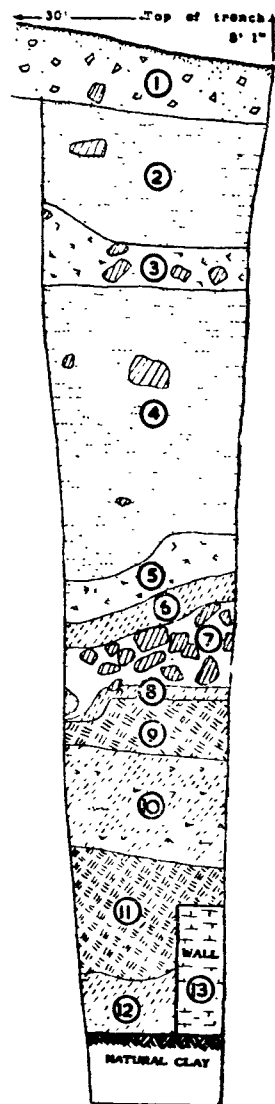
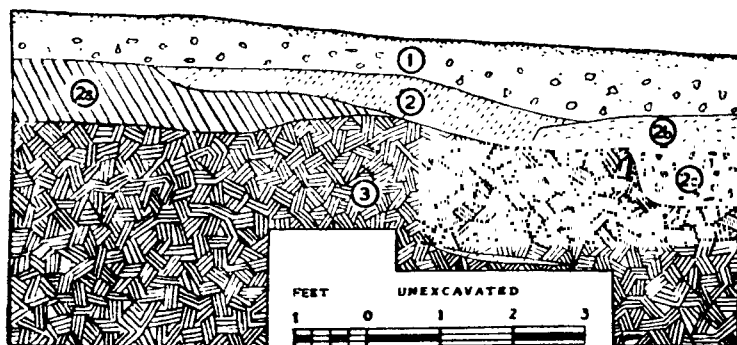


Fig. 7. Siah-Damb, Trench I, section; plan of Trench II and Trench III, Section

of any structures. Below the first two levels, the soil turned to a hard bricky silt with only an occasional ashy streak or even rarer sherd to show that it was not entirely natural. There was, however, nothing to suggest that it was a deliberate artificial fill, and it is best regarded as a naturally water-laid deposit incorporating a small amount of cultural material from the nearby mound.

TRENCH II

The second trench (Pl. II,b) was laid out at right angles to the slope of the mound at the point where surface sherds of the greatest variety had been found. This trench was intended to serve as the lower step of a double cutting, as in the case of Trench II at Anjira. This project proved beyond the funds and labour force available, nor did surface collections show that there was any later material not already known from the stratified deposits at Anjira. The trench as finally cut served to amplify the material of Anjira III and confirmed the sequence obtained there. Even the lower trench, 12 feet by 30 feet, was soon limited to a "square" the width of this and 11 feet (8 feet over the other half of the trench) long at the upper end. It was sunk to a maximum depth of 13 feet. A shaft at the lower end was continued as Trench III to the natural soil.

This trench produced structures in bewildering quantity and variety, which will be described below in their order of construction. Too small an area was opened for plans to have much significance but one is given for the sake of clarity (Fig. 7).

The walls, all of mud-brick, and accompanying levels, were as follows.

Wall G, of which only a short stretch survived, was a single brick thick, 6 inches. The bricks had fused too completely in decay for any other of their measurements to be taken. The wall was built into, and covered by, the steady aggradation of layer 15, an ashy deposit with lenses of decayed brick showing the existence of earlier structures nearby.

Layer 15 was sealed by the hard yellow layer 14. Into this was cut a pit, layer 13, of which only a small part was exposed in the corner of the trench. The heavy stone rubble above it must represent foundations for the 'podium', suggesting that the pit was a large one extending well to the north and west if such precautions against the subsidence of the superstructure were necessary.

The 'podium', layer 12, was easily the most prominent feature in the trench. The term applied to it is not intended to suggest its function, but was chosen rather to avoid the unproven but by no means impossible identification of this structure as part of a massive defensive wall around the site. Only an excavation far beyond the means at our disposal could have settled the question. The masonry of the 'podium' was poorly laid, the only face exposed being distinctly rough and the bricks, often incomplete, were irregularly laid with intervening gaps. The standard size, discounting those broken before they were laid, was $10\frac{1}{2}$ to $12 \times 6 \times 3$ inches, though a few of $9 \times 9 \times 3$ inches were included (originally double width, $12 \times 12 \times 3$ inches?). This structure extended for the full 12 foot width of the trench, and 6 feet of it were exposed from front to back. Its height, apparently complete, was 4 feet. Set in its surface at the western edge of the trench were large boulders, the immediate footing for wall F, of which only the stump remained. This may have been the wall itself, everything lower being foundation. The gravel-filled tunnels in the east face of the trench appear to be the result of water seeping through the brickwork.

A period of abandonment followed the building of the 'podium', though the associated pottery suggests that it was not of long duration. Whatever structure had been built upon the platform was destroyed, and covered in the centre of the trench by a considerable deposit of laminated silt, derived from the decaying walls and laid down by a series of rain storms. This did not extend to the sections.

Building was later restarted on a much smaller, domestic, scale. Wall D is the outer angle of a structure outside the trench—it coincided exactly with the side of the trench causing a bewildering discrepancy between the north and east faces. Wall D is associated with the less well preserved wall E by the beaten floor, level 11, which curves up against both walls. Wall D still showed part of its original mud-plaster facing. The bricks were of the same $10\frac{1}{2} \times 6 \times 3$ inch size.

Wall C was subsequently built to abut against wall D at right angles to its western side. No individual bricks could be distinguished, and it may have been of *pisé*. Its width of 9 inches is at variance with the standard size of bricks noted on the site. The wall was then strengthened by rather irregular brickwork on its south side, where bricks of standard size were noted.

The next addition was on the other side of D. Wall B was nearly 3

feet thick, built of much larger bricks, 15 x 9 x 6 inches. On its west, the floor was raised by $1\frac{1}{2}$ feet from the old level in layer 11 by means of brickwork, a rather unusual feature, incorporating the stump of wall F. The west section does not show this well because of the destruction brought about by two large pits (see below). The narrow space between walls B and the still-standing D, $3\frac{1}{4}$ feet, had a rough stone paving immediately above the old earth floor, level 11. A thin line of gravel 6 inches above marked a higher floor.

The remaining deposits on the eastern side of the trench all marked a period of destruction; the tumbled brick of level 6, the silt of 5 and the crumbled brick of 3. The full height of the mound at this point before erosion reduced it to its present level is unknown.

Several pits had been cut through the west side of the trench. One presented problems of interpretation since it coincided exactly with the north face of the trench for some distance. It cut through the brick floor, level 8, and was filled with stone rubble, level 4*b*. Later, the floor and wall C were abandoned and buried beneath ashy domestic refuse, levels 4 and 4*a*. Minor pits filled with ash, level 2*a*, were all but obliterated when the great pit, layer 2, was dug. This looked more like a quarry for brick material than a rubbish-pit, the stone rubble filling being that part of the spoil rejected in brick-making. Within it, aligned approximately and clearly fortuitously, on wall C, was a very rough wall, A, in a poor state of preservation. It did not extend into the west section. Its bricks were 13 x 7 x 4 inches, yet another size unrecorded elsewhere.

TRENCH III

A small area in the lower end of the trench was continued in an attempt to reach natural soil. On the analogy of Anjira, and considering the natural hillocks around Siah, this was not expected to lie much below the modern surface. As the section shows (Fig. 7), the layers cut through were undistinguished, consisting of material washed down from the mound. The only structure noted was part of a wall at the bottom of the shaft running diagonally across the south-east corner. No individual bricks could be distinguished. Natural soil was a hard, uniform silt, similar to the lowest level in Trench I. It was reached at the level of the surrounding plain, 37 feet below the highest point of the mound. Digging was continued for 9 inches to confirm its natural origin without revealing any trace of charcoal, pottery or other signs of human interference.

THE CULTURAL SEQUENCE AT SIAH-DAMB, SURAB

The pottery from Siah-Damb could nearly all be classed as falling within Period III of the Anjira sequence. The ceramic assemblage of that period had been particularly poorly represented at Anjira and it was in the hope of obtaining fuller information that the excavations at Siah had been undertaken. That objective was achieved, the pottery at Siah being available in so much greater quantity and depth that it could be sub-divided into three phases of a period of continuous development. The sequence proposed for Siah-Damb is as follows:—

Siah Period I. The material from the three lowest levels in the deep cut, Trench III, consisted of a few hand-made sherds, one basket-marked and a fragment of a coarse black on red slipped ware. The material was too sparse to speak with certainty, but it can probably be equated with Anjira Period II.

Siah Period II, Phase i. Basket-marked and Kile Gul Mohammed painted ware were common in the early phase of this period. A few sherds of a grey ware probably comparable to that noted in Anjira Period II were found. A number of examples of Togau-ware were found, particularly the variety of animal frieze in which only the heads are depicted below the horns around the inside of the rims of shallow bowls (Togau B, see analysis below, p. 136). Some chert implements of the kind found at Anjira were recovered in Level 15, with a few sherds of fine bichrome ware, both red and cream-slipped, of interest also were four pieces of ribbed tiles (Pl. VI, C and Fig. 12, 6) for which no parallel within Baluchistan is known.

Layer 15 of Trench II was the most important level for this material. Though a homogeneous deposit, it was dug in three arbitrary spits as it seemed to have accumulated over a period of time in which changes in the pottery were taking place. Its top spit, for example, which was in some ways transitional to the next, had basket-marked ware and no double horned Togau sherds. The scanty finds in layers 7 to 10 of the deep shaft, Trench III, also belong here.

Siah Period II, phase ii. Kile Gul Mohammed ware became infrequent and basket-marked ware had almost disappeared in this phase, while the heads and horns of the Togau frieze, Type B, were replaced by single horns or hooks in black on red ware, Togau C. These wares were accompanied by others, both hand and wheel-made, plain and painted. Among the latter

was a bichrome ware more closely resembling Amri-Kechi Beg wares than Nal, Zari-ware, and a few sherds of granulated and colour-coated Anjira-ware.

The division between this phase and the next is hard to draw and the details can be better discussed in the next section. Anticipating the arguments there, layers 11 to 14 of Trench II can be attributed to this period. It is therefore the period of the 'podium'.

Siah Period II, phase iii. Anjira-ware became dominant in this phase. Zari-ware continued but the majority of Togau sherds were of Type D, many fired to black, making the black hook frieze difficult to distinguish. The decorated pottery was more closely analagous to Nal-Nundara than Amri-Kechi Beg. A few sherds of true polychrome and a lobed bowl of Nal type were found, the latter associated stratigraphically with Togau Stage D. Other finds included the horn and head of a large bull figurine, one of the few noted, a bone awl and an unpierced bone bead.

The steady change which was noted in these three phases must be emphasised. In phase iii, Anjira-ware became common from level 10 upwards, but black Togau, type D, sherds were not found in any quantity until level 5 of Trench II. The former is the more important change, and, supported by the break in stratigraphy marked by the thick silt deposit of layer 10 (which did not extend to the section), has here been taken as the more appropriate division. The difference in interpretation possible is important as on it depends the dating of the domestic constructions, the upper walls. Phase iii continues to the surface in both trenches and includes all the material recovered from Trench I.

Siah Period III. As at Anjira, and more readily understandable, surface sherds included later material than that which occurred in the trenches. Trench II began on the slope a dozen feet below the level of the top of the mound and there seems little doubt that the projected higher trench would have uncovered later layers. The surface finds suggested, however, that such layers would have been strictly comparable to Anjira Period IV.

The occupation-levels of Siah and Anjira may be correlated as follows:—

SIAH				ANJIRA				
<i>Tr. I</i>	<i>Tr. II</i>	<i>Tr. III</i>	<i>Period</i>	<i>Period</i>	<i>Tr. I</i>	<i>Tr. II</i>	<i>Tr. III</i>	<i>Cliff</i>
Surface				V	1	—	1	—
Surface and unexcavated				IV	2—6	—	2—3	—
1—3	1—10	1—4	II, phase iii	III	—	1, 1a, 2?	4—5	—
—	11—14	—	phase ii					
—	15.a,b	4a—10	phase i					
—	—	11—13	I	II	7—9	2?, 3—7	—	scrape
—				I	10—13	8	—	—

TABLE A.

THE CHRONOLOGY OF THE SURAB REGION IN RELATION TO THE CULTURES OF ADJACENT COUNTRIES

The Surab excavations provided a continuous and interlocked sequence which could be related at various points to the cultures of adjacent countries. The earliest culture yet known in Baluchistan is that of Kile Gul Mohammed where a time range of 3500-3100 B.C. was obtained by C. 14 methods (Kulp: 5300+200) for the upper level of Period I. No equivalent occupation was noted in the limited area excavated on the Surab sites but the cultural assemblage of Kile Gul Mohammed II-III could be identified with the pottery and flake-blade industry of Anjira I-II. Kile Gul Mohammed ware is not easily identified from published sources unless recognisable designs are illustrated and it is therefore difficult to postulate its distribution. My survey showed that it extended from Quetta to the Ornach valley, north of Las Bela. A basket-marked ware (p. 124) formed part of the Kile Gul Mohammed ceramic group both at the type-site and at Anjira and the presence of such sherds on sites in Kharan and Bampur suggests that the culture was widespread. So far it has not been recorded in Sind and further survey is required to define its eastern limits.

Certain elements in Kile Gul Mohammed pottery suggest comparison with Sialk I and related sites in Turkmenian S.S.R. Both cultures combined

buff and red-slipped burnished wares, the latter predominating. Decoration appears to have been restricted to one surface of the vessel until late in Sialk I and a similar simplicity was noted in the Kile Gul Mohammed pottery of Anjira II. While its decorative repertory is limited, five Kile Gul Mohammed motifs find close parallels in Sialk I. Short vertical bands of wavy lines (Fig. 8, 2 and 20) occur in Sialk I,¹ as do cross-hatched² and black pendant triangles (Fig. 14, 21-22)³ and groups of short pendant lines (Fig. 8, 16)⁴. Dot-tipped rosettes (Fig. 8, 15 and 18), known at Anjira and in Kile Gul Mohammed III, have not so far been recorded in Iran before Sialk III, 2. The curious reticulated band of streaked triangles (Fig. 8, 1 and 17) appears to have a range of from Sialk I⁵ to Hissar IA.⁶ in Turkmenistan, a more formal version of this pattern is known in a Sialk I context in Geoksyur 1, level 10⁷, At Kara Tepe, near Artyk, it was associated with material of late Namazga I⁸, the correlations proposed by Masson⁹ bringing the end of that period within Sialk II—McCown's Chashmah Ali culture¹⁰.

There are, however, certain difficulties in accepting a late Sialk I correlation for early Kile Gul Mohammed ware on the present evidence. The cultural deposit at Kile Gul Mohammed extended to a depth of about 22 metres, of which the first 11 metres (Period I, phases 19-45) contained a number of floor-levels and brick walls but apparently no pottery. Yet wheel-thrown wares appeared in Period II and were common not only in Kile Gul Mohammed III but in the contemporary levels of Sur Jangal I and Rana Ghundai IB (Fairservis)¹¹; while at Anjira they were present in the earliest levels. In Iran, however, such wares were not found before Sialk III, 4, and Hissar IB. Our knowledge of the earliest, hand-made Kile Gul Mohammed ware needs to be expanded before firm correlations with Sialk I can be supported, but the conservative and limited range

1. R. Ghirshman, *Fouilles de Sialk près de Kashan*, I (1938-9), Pl. XL, A4, B2, D9; XLI, B9, D1.
2. Walter A. Fairservis, Jr., 'Excavations in the Quetta Valley, West Pakistan', *Anthropological Papers of the American Museum of Natural History, New York*, 45.2 (1956), Fig. 50.
3. *Sialk*, Pl. XL, A3; XLI, B1; XLII, A; and XLIV, D8.
4. *Ibid.*, Pl. XL, A9; XLII, C4. See also Sialk culture pottery from Bami, O.K. Berdyev, *Sovetskaya Arkheologiya*, 4 (1963), 188-94, Fig. 3, 2 and 5.
5. *Sialk*, Pl. XL, D4, 5, 14; XLI, A14; XLII, C8.
6. E.F. Schmidt, *Excavations at Tepe Hissar, Damghan*. Pennsylvania Univ. Mus. Publ. (1937), Pl. III, H. 1522.
7. V.I. Sarianidi, *Sov. Ark.*, 3 (1960), 141-52, Fig. 2, 34, 35 and 37.
8. V.M. Masson, *Sov. Ark.*, 1 (1957), 142-60, Fig. 9, 14.
9. *Antiquity* 35.139 (1961), 212, table.
10. For definitions of the Iranian cultures, see D. McCown, *The Comparative Stratigraphy of Early Iran*, *Studies in Ancient Oriental Civilization*, 23 (1942), 12.
11. Walter A. Fairservis, Jr., *Archeological Surveys in the Zhob and Loralai Districts, West Pakistan*, *Anthrop. Pprs. of the Amer. Mus. of Nat. Hist., New York*, 47.2 (1959), 363.

of motifs, as shown both on the type-site and at Anjira, suggests that the wheel-thrown ware reflects an earlier decorative tradition which may have its roots in Sialk I.

Another link with the cultures of Iran was provided by the distinctive pottery known as Togau-ware. While the Surab excavations failed to produce examples of Togau-ware in its typologically earliest stage A, it was possible to demonstrate the devolution of the frieze pattern through stages B-D (p. 134) during Period III¹. Since both Togau B and C were found from the start of Period III, the development or introduction of Togau A must be related to an earlier period. A few sherds of Togau A were found in Mundigak I, 3; excavations at Gorpat, in the Surab valley, should throw light on the origins of this ware since Togau A-C was found on that mound with hardly any wares later than Kile Gul Mohammed and basket-marked. At the beginning of Period III, Togau B and C were associated with Kile Gul Mohammed and Kechi Beg wares, the general assemblage being best related to Kile Gul Mohammed IV/Damb Sadaat I. Stage D appeared towards the end of Surab Period III and overlapped the local variant of Nal which became dominant in Period IV. No Togau C was found in a stratified context during the excavations in the Quetta valley but surface sherds were noted on sites where Kechi Beg wares were present. The recent discovery of Togau C in the earliest levels at Amri², which also provided evidence of contact with the Kot Diji culture, is of particular interest in view of the C. 14 dating of Kot Diji, layer 14, to 2471 ± 141 B.C.³. Togau D occurred from the end of Amri IB and in IC. The late Colonel D. H. Gordon⁴ had proposed a date of c. 2600 B. C. for Togau C in Sind—a reckoning based upon the association of Togau with his 'middle' Amri and 'early' Nal, and the overlap of the latter with the earliest Harappan material at Pandi Wahi. At Niain Buthi, Las Bela, Togau, again apparently in Stage C or later, preceded and overlapped Nal, which was succeeded by Kulli⁵.

As in the case of the Kile Gul Mohammed culture, it would be unwise to propose close correlations between Togau and the Iranian cultures on

1. The diagram, Fig. 2, in the summary published in *Antiquity*, 33 (1950), is incorrect; Togau B-D should be restricted to Period III and not as shown continuing from Periods II-III since Stage B has not been found in stratified levels of Period II.
2. J.-M. Casal, Fresh Digging at Amri, *Pakistan Archaeology*, 1 (1964), 633; *Fouilles d'Amri*. Publications de la Commn. des Fouilles Archaeology, ques, Paris: Klincksieck (1964), Summary, P. 14.
3. Excavations at Kot Diji, *Pak. Arch.*, 1 (1964), 43.
4. *The Prehistoric Background of Indian Culture*, Bhulabhai Memorial Inst. Bombay (1958), 38.
5. Unpublished report by Dr. D.E. McCown; I have not seen the illustrations.

the present evidence. The range of forms and the total quantity of Togau B-D found in stratified levels is relatively small while the typologically earliest material is known only from surface finds. It is however possible to point to closely comparable designs in the Chashmah Ali and early Hissar cultures. Togau motifs 12, 22, 24 and 26 (Fig. 10) all occur in Sialk II¹; the net pattern, No. 14, is suggested by the stylised birds of that period but continues into Hissar IB and C.² Some of the Togau animals (Fig. 10, A and 2), perhaps more clearly than their Zhob counterparts, illustrate the 'skid' position of Hissar animal patterns³; the linked human figures in short skirts, facing to the right (Fig. 10, 4) are best paralleled at Chashmah Ali⁴ and in Sialk III, 4-5⁵. A number of the Togau motifs are also found on buff-slipped pottery from Khuzistan⁶ and Fars⁷.

When the range of forms and decoration of Togau A has been enlarged, it may be possible to regard this early stage of Togau-ware as a parallel development within Baluchistan in line with the late Chashmah Ali culture. A similar relationship has already been established between the animal designs of Hissar IC and the 'Bull' pottery of Rana Ghundai II⁸. Trial-excavations showed that Rana Ghundai II was partially contemporary with Damb Sadaat I and slightly later than Kile Gul Mohammed IV⁹ so that the 'Bull' pottery was perhaps being made at a time when the Togau frieze had already reached stage C in its devolution.

The links which can be traced between north-eastern Iran and central Kalat before and shortly after the beginning of the third millennium B.C. appear to have been interrupted in the Surab valley at the end of Period III and throughout Period IV when Nal people occupied the area. During their control of the region there seems to have been little contact with the Quetta people whose territory within Baluchistan stretched southwards to

1. *Sialk*, No. 12; Pl. XLVII, D.10; XLVIII, A3; No. 2; Pl. L, A 14; No. 24; Pl. XLIX, B 21.
2. *Ibid.*, Pl. IX, 1; *Hissar*, Pl. VI, D.H. 35.17.6 and Pl. IX, H. 4365.
3. McCown, *Comparative Stratigraphy*, p. 18, note.
4. R. de Mequenem, Notes sur la ceramique peinte archaïque en Perse. *Delegation en Perse, Memoires* 20 (1928), Fig. 24, 1.
5. *Sialk*, Pl. LXXV. See also McCown, *Stratigraphy*, p. 31, note 96, and a skirted figure from Tepe Bendebal, L. le Breton, Note sur la ceramique peinte aux environs de Suse et a Suse, *Delegation en Perse, Memoires* 30 (1947), Fig. 41, 6.
6. Togau Nos. 13, 14, 21: cf. A. Stein, *Old Routes of Western Iran* (1940), Pl. III, 11, 17 and 20, from Tall-i-Bava Muhammed; Nos. 2, 3, 22, Pl. III, 4, 5, and 3; Pl. II, 16, from Malamir.
7. A. Stein, *Ancient Persis, Iraq*, 3, Pl. XXII, 5, from Vakilabad.
8. S. Piggot, Dating the Hissar Sequence - the Indian Evidence, *Antiquity*, 17.68 (1943), (169-82.
9. *Zhob*, p. 363.

the neighbourhood of Kalat city. Survey showed that Nal settlements extended north as far as Saiyed Maurez, Mungachar, leaving an intermediate zone in which both cultures were sometimes represented on the same site either as the result of trade or intermittent border warfare. No true Quetta sites (in the sense used by Professor Piggott) have yet been found in south-western Kalat.

The appearance of Quetta-ware on sites stretching from Turkmenistan to south-eastern Afghanistan suggests that the culture was transmitted from the north-west and not from Fars¹. It also provides further correlations with the cultures of Iran but these must at present be used with considerable caution. Excavations in Namazga III, for which a C. 14 dating of 2750 ± 220 B. C. was obtained², produced material analogous to Hissar IC-IIA and Sialk III, 4-7, and filled the gap between Anau II-III³. At Deh Morasi Ghundai, the Quetta levels (Period II) were best related to Sialk III. The Quetta occupation of Mundigak III, on the other hand, has been placed well within Sialk IV and Hissar II A-B and related to Anau II⁴.

It was not until the end of the Nal occupation of Period IV that contact was renewed with a people from the north. The evidence (p. 98) found in superficial layers and on the eroded surface at Anjira clearly identified these newcomers as the people who invaded Mundigak early in Period IV and appeared in northern Baluchistan during Rana Ghundai IIIC and Damb Sadaat III. At the latter site they are the makers of the Sadaat-ware, recognised by Mr. Leslie Alcock in Cut 3⁵. A C. 14 date of about 2100 B.C. (Kulp: 4050 ± 200) was obtained for Damb Sadaat II-III⁶. Damb Sadaat III was an extensive period with two architectural phases and it is therefore likely that the Sadaat invaders appeared after rather than before the beginning of the second millennium B.C.

THE POTTERY AND OTHER FINDS⁷

The pottery from Anjira and Siah-damb will be dealt with on the basis of the cultural sequence established on the former site. The wares of the

1. S. Piggott, A new Prehistoric Ceramic from Baluchistan, *Anc. India*, 3 (1947), 131-42.
2. V.M. Masson, *Antiquity*, 35.139 (1961), 203-13, Pls. XXVI-XXVII, and *Sov. Ark.*, 1 (1957), 143-60.
3. Louis Dupree, Deh Morasi Ghundai: a Chalcolithic Site in South-Central Afghanistan, *Anthrop. Pprs. of the Amer. Mus. of Nat. Hist., New York*, 50.2 (1963), 115, and Fig. 3.
4. J-M. Casal, Fouilles de Mundigak, I, *Mem. de la Deleg. Arch. Fran Caise en Afghanistan*, Tome 17 (1961), 99.
5. *Quetta*, p. 362-71.
6. *Ibid.*, p. 356-7.
7. Apart from sherds in Pakistan, the material illustrated in this Report has been divided between the Museum of Archaeology and Ethnology, Cambridge, and the University of London Institute of Archaeology.

first two periods at Anjira, and the earliest occupation-levels at Siah, form a related group, and in so far as the very limited material allows, an attempt has been made to classify both forms and distinctive decorative motifs.

The ceramic evidence of Anjira III was scanty, and in view of the importance of this period which saw the typological development of Togau-ware and the introduction of an Amri-Kechi Beg type ware, the pottery of Siah has been presented as fully as possible in relation to its stratigraphical context.

The pottery of Periods III-IV raises certain points of interest. Bichrome ware from the lower levels of Period III resembled Amri-Kechi Beg wares but by the end of that period the simple geometric patterns had given way to a style more closely comparable to Nundara-Nal. The pottery of Period IV was more clearly a local variant of Nal than Kulli, though it included elements not hitherto associated with Nal, such as Zari-ware and a colour-coated, cordoned ware which has been found elsewhere in a Kulli context. Provisional names have been given to these wares in order to avoid confusion or their incorrect identification with a particular culture at the present stage of research.

Since this is the first account of pottery from stratified deposits in central Kalat, the material has been illustrated in detail. Most of it comes from sealed deposits but some surface sherds have been included where they appear to be of significance or to supplement the typological aspect of the ware. Similarly, the material representing the eroded occupation of Anjira V has been presented as further evidence for the arrival in Kalat of a people associated with the late prehistoric period in northern Baluchistan.

WARES CHARACTERISTIC OF PERIODS I-II

KILE GUL MOHAMMED WARE

The Kile Gul Mohammed occupation of Anjira lay almost wholly within Periods I-II, only six sherds being found in later levels. At Siah it is significant that no Kile Gul Mohammed sherds were found above the floor on which the 'podium' was built, and the culture was confined to Periods I-II, phase i, on that site.

Comparison with specimens from the type-site provided by Dr. Walter A. Fairservis, Jr., shows that the ware from both localities is identical in appearance, being usually a thin, hard, buff ware with rich red slip, occasionally highly burnished. The finer sherds from Siah and Anjira were all wheel-

turned. A few unslipped sherds were found in a burnished buff ware similar in fabric and decoration to the more usual red-slipped ware. As at Kile Gul Mohammed, Rana Ghundai and Sur Jangal¹, a coarser ware relying on the same decorative motifs was associated stratigraphically with the finer ware. Some hand-made vessels, red-slipped but otherwise undecorated, were also found throughout Periods I-II and continuing into Period III at Anjira. Almost certainly the distinction between these wares lies in the use to which the vessels were put, a coarse fabric obviously being necessary for the heavier domestic utensils, and it is not proposed to differentiate between them by using the name, Jangal Coarse Painted ware, as suggested in the Zhob area.

The range of vessels illustrated in Fig. 8, though limited, amplifies the material from the type-site. Narrow-necked jars (No. 1) were noted but not illustrated from Kile Gul Mohammed. At Anjira, large, medium and diminutive globular jars with short vertical necks were found (No. 4). The most common form, however, was an open bowl (No. 14), more curved than the Togau bowls of Period III. Bases, previously recorded as flat, with a single pedestal, included a further example of a small pedestal (No. 7) and a number of flat, beaded bases (No. 13).

Decoration was restricted to a few simple but distinctive motifs executed in black. These included a single narrow band around both sides of the rim, though narrower on the inner. Appended from this edging were often groups of short vertical lines ending in swollen blobs and more readily referred to as 'drumsticks' (Nos. 8 and 16). Dot-tipped pendant triangles, either solid or cross-hatched² were common inside shallow bowls. Narrow blocks of design composed of short, horizontal lines, either wavy or less commonly straight (Nos. 2 and 20) were sometimes ranged at intervals on the shoulders of jars. Similar in inspiration but more closely resembling its leather prototype was the 'stitching' found down the outside of some vessels, a motif which also appears on Togau-ware bowls (Fig. 13, 1, 4). Another pattern probably originating from a netted carrier was the irregular over-all pattern of roughly conjoined horizontal lines (Nos. 1 and 17). The distinctive dot-tipped rosette, known from the type-site, occurred inside bowls and on the outside of jars in both medium and coarse wares (Nos. 15 and 18). Analogies with Sialk I suggest that the Kile Gul Mohammed culture may represent a parallel development of the Iranian culture in Baluchistan (sec. p. 115-116).

1. Walter A. Fairservis, Jr., *Archaeological Surveys in the Zhob and Loralai Districts, West Pakistan. Anthropol. Papers. Amer. Mus. of Nat. Hist.*, 47.2, p. 365.
2. *Quetta*, Designs 10 and 9.

Fig. 8

Type 1. Large globular jar with slightly flaring, tapered rim, diam. 13 cm. Dark red slip. A black band extends over the edge of the rim and another round the shoulder forms the upper limit of a zone of conjoined streaks. The form, though known, is not illustrated from Kile Gul Mohammed (Aj. Tr. II, 6).

Type 2. Small jar with short everted neck, diam. 10.5 cm. Broad black band at rim above groups of short parallel wavy lines on dark red slip (Aj. Tr. III, 4).

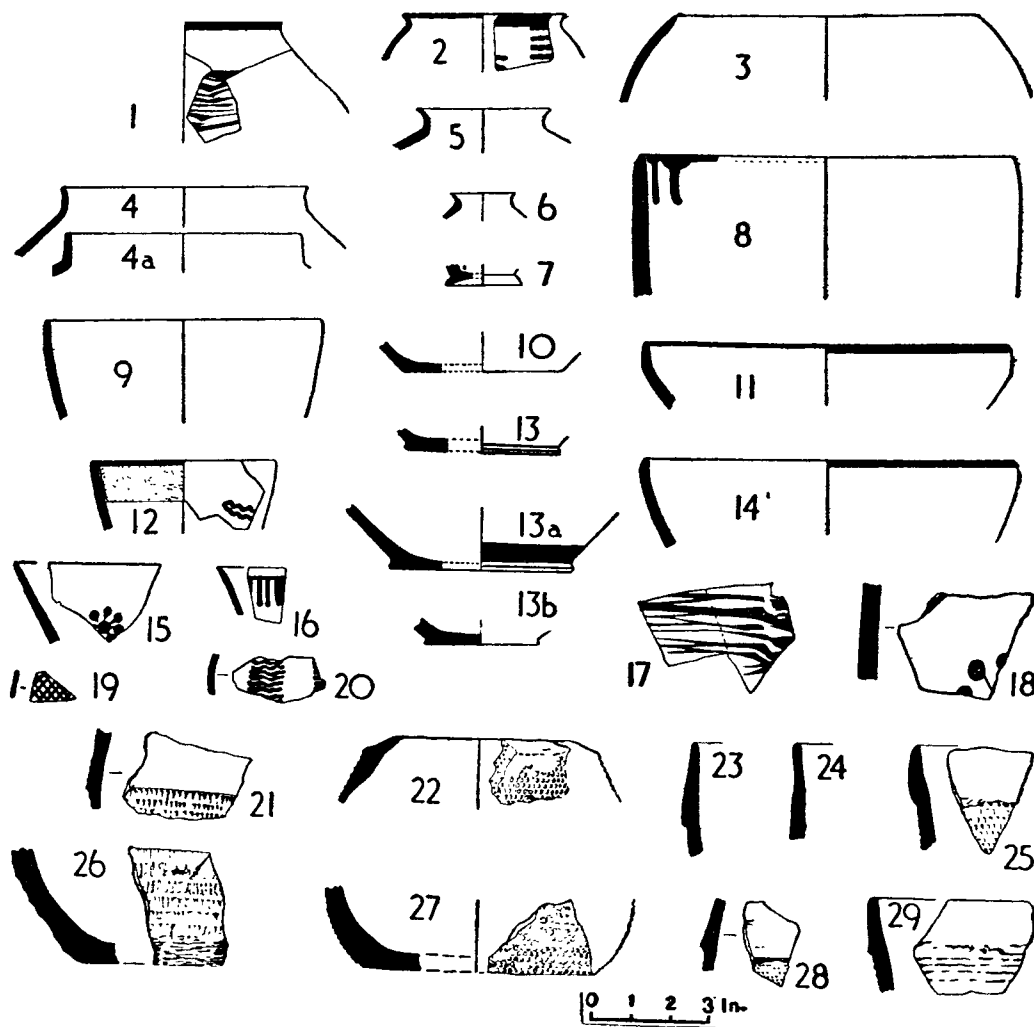


Fig. 8. Kile Gul Mohammed ware and Basket-marked ware (†)

Type 3. Large globular bowl with incurved, tapering rim, diam. 19.6 cm. Very smooth surface similar in texture to the grey ware found in the same level (Aj. Tr. II, 8). Similar sherds occurred in level 5, one decorated with black horizontal bands; the other with quadruple 'drumsticks'. A jar with narrow mouth but similar shape is known from Kile Gul Mohammed (Quetta, Fig. 50).

Type 4. Straight-necked jar, diam. 16 cm. The rim is sometimes slightly everted and edged with black externally (Aj. Tr. II, 5). *Variant 4a* has a sharply out-turned shoulder; rim diam. 15.4 cm. The form does not occur at Kile Gul Mohammed (Aj. Tr. II, 6).

Type 5. Narrow-necked jar with rolled rim, diam. 8.6 cm. The red slip is almost entirely worn away and the fabric pitted, a feature noted on several examples of this ware. Unrecorded at the type-site (Aj. Tr. II, 5).

Type 6. Miniature globular jar, diam. 4 cm., with sharply out-turned shoulder. Red-slipped with traces of black band at rim. Unrecorded at Kile Gul Mohammed (Aj. Tr. II, 7).

Type 7. Finely-made pedestal base, diam. 5 cm., of small red-slipped jar or bowl with relatively thick walls. A single pedestal-base was found at Kile Gul Mohammed (Aj. cliff-scraps).

Type 8. Straight-sided bowl, diam. 24.5 cm., of coarse gritty ware with thick red slip, perhaps hand-made but finished on a turn-table. The band inside the rim has either run or is a crude use of the 'drumstick' motif (Aj. cliff-scraps).

Type 9. Deep bowl with slightly everted sides straightening at the neck, diam. 18 cm. Irregular in shape, but apparently wheel-thrown. Red-slipped externally. The form occurs at the type-site (Aj. Tr. II, 6).

Type 10. Flat base, diam. 10.3 cm., of relatively thin-walled bowl or jar (Aj. Tr. II, 8). Similar bases in levels 5-6 all showed traces of red slip, badly flaked with bases of sandy texture.

Type 11. Open bowl with short straight-sided neck, diam. 21.5 cm. A slight curve marks the turn of the sides towards the base. The buff/tan fabric is plain inside, red-slipped externally over a panned surface. Black band over rim edge (Aj. Tr. II, 6).

Type 12. Small tronco-conic basin, diam. 12 cm., with relatively thick walls, a form known at the type-site. The ware is greyish-buff, hard, and vertically burnished to a high gloss. Tan-slipped externally, the slip extending inside the basin in a broad band on which a narrow black band is painted at the edge: wavy line motif outside. The sherd is more highly burnished than the red-slipped ware but the difference between the wares lies in slip and finish rather than form or fabric. The latter is similar in texture and thickness to the polished grey ware from Aj. Tr. II, 5 and 8 (Aj. cliff-scraps).

Type 13. Slightly angular, flat, beaded base, diam. 10 cm. (Aj. Tr. II, 6). *13a* is a more pronounced beaded base, diam. 12 cm., in thinner fabric. Broad black band above the beading. The base is sandy (Aj. Tr. II, 5). *13b*, flat disc base, diam. 7.5 cm., of bowl, red-slipped inside (Aj. Tr. II, 6). Beaded bases are not recorded from the type-site.

Type 14. Large open bowl with slightly inverted rim, diam. 24 cm., and gently curving proving profile. The buff/tan fabric of the bowl is exposed inside; dark red slip outside with black band at rim. This was the most common form (Aj. Tr. II, 6).

The following sherds illustrate common decorative motifs.

15. Tronco-conic bowl in thick buff fabric with tapering rim. Both the form and the dot-tipped rosette occurred at Kile Gul Mohammed (Aj. cliff-scraps).

16. Bowl, similar to No. 15, with tapered rim. A fringe of 'drumsticks' hangs from a single black band set just below the rim (Aj. Tr. II, 5).

17. Sherds with pattern similar to No. 1; perhaps part of the same jar, but found in the level above (Aj. Tr. II, 5).

18. Coarse gritty red-slipped sherd, with part of a diagonal black band and dot-tipped rosette. From a Period IV level and possibly intrusive (Aj. Tr. III, 2).

19. Sherd in very thin buff paste, self-slipped, with light brown cross-hatching. This sherd cannot with certainty be classed as Kile Gul Mohammed ware though the textural resemblance is close (Aj. Tr. II, 6).

20. Fragment of a small globular pot in orange-red ware. The fabric and tan-red slip are unusual. The groups of wavy horizontal lines are closer and finer than in No. 2. One of six sherds found in levels later than Period II (Aj. Tr. III, 5).

BASKET-MARKED WARE

This ware was noted by Stein on sites in northern Baluchistan and Kharan and is referred to by him as 'mat-marked'. It was found with Kile Gul Mohammed ware on the type-site in Period II and named Burj basket-marked ware¹. Its description as 'basket-marked' is preferable to 'mat-marked' as it indicates more accurately the method of manufacture. It also avoids confusion with sherds usually, though not invariably of later date, with mat-impressions on the outside of a flat base. Only one base with mat-impressions similar to, but finer than, those on a sherd from Kile Gul Mohammed III² was found at Siah (Tr. II, 10).

The production of coarse domestic pottery moulded and fired inside a frame is of interest both technically and as evidence for the use of stitched, coiled basketry products of a perishable nature. The stitching is regular and the coiling varies in width from one to three-tenths of an inch. In one case, grasses appear to have been wrapped around the shoulder of a thick jar (Fig. 8, 29) before firing. Occasionally the surface of the sherds show signs of considerable wear, the basket-marks being almost worn away and appearing as shallow grooves.

The ware varies in thickness from medium to heavy, and the fabric contains large yellow to buff grits. The vessels are hand-made, the clay being pressed into the basketry mould, and the wall built up another 5 to 7.5 cm. to form a plain overhanging-rim above the basket. The most common form was a roughly cylindrical pot with the angle to the flat heavy

1. *Quetta*, p. 259 and Fig. 52.

2. *Ibid.*, Pl. 35, C.

base rounded off (No. 26). An incurved jar (No. 22) was a new and unusual form in this ware. Rims were either vertical or slightly everted, tapered or flattened at the edge.

Basket-marked ware occurred with Kile Gul Mohammed pottery at Anjira in Period II and continued into III. At Siah, it occurred in all the early levels, Periods I, II, phases i-iii, though less commonly in the latter phase. On both sites it appeared to continue in use after Kile Gul Mohammed ware had vanished or become scarce.

This ware has been found on a number of sites within Kalat. It extends westwards to Toji and Pir Hassan Shah in Kharan and is fairly common on sites throughout Jhalawan and Sarawan. It is recorded at Said Kala Ghundhai near Kandahar in Afghanistan¹ and at Chah Husaini and Qasimabad in the Bampur basin². No examples have yet been found in the Indus valley.

Fig. 8

21. Sherd showing broad coils and narrow rectangular impressions of basketry stitching at frequent intervals below the plain overhanging-rim. Period III (Aj. Tr. II, 1).

22. Rim of incurved jar, the neck swollen internally but tapering at the edge and thinning out below the shoulder. The basketry impressions are hexagonal rather than rectangular in shape. The form is not recorded from Kile Gul Mohammed. Period III (Aj. Tr. II, 1).

23. Deep, tapering rim with traces of the basketry mould below the projection. Period II (Aj. Tr. II, 6).

24. Rim of straight-sided vessel with basket-marks 3 cm. below the edge. Over-fired gritty ware. Three vertical stab-marks inside. Squat vessels without overhanging-rims occurred at Kile Gul Mohammed but were rare at Anjira and Siah. Siah Period II, phase iii (Sh. Tr. I, 3).

25. Short, rather swollen overhanging-rim. Coarse buff ware. The rectangular basket-marks decrease in size from the rim downwards. The rim-form occurred at Kile Gul Mohammed. Period III (Aj. Tr. III, 4).

26. Flat base of heavy jar, with thinly rectangular basket-marks. One of the few sherds found in Period IV (Aj. Tr. I, 3).

27. Flat-based jar with hexagonal impressions similar to No. 22 of which it may be part since it comes from the same level. The basket-marks are barely visible on the base.

1. *Preliminary Report on the pre-historic archaeology of the Afghan-Baluchi areas*. Walter A. Fairservis, Jr. American Museum of Nat. Hist., New York, Novitates, No. 1587 (12 Sept. 1952). p. 24.

2. A. Stein, *Arch. Rec. in N.W. India and S.E. Iran*, Pl. XIX, Hus. 258 and p. 127.

28. Sherd showing the impression of a coiled foundation with exceptionally fine stitching. Period II (Aj. Tr. II, 7).

29. Overhanging-rim of jar with everted sides. The vessel appears to have been bound with grasses below the rim, a technique noted at Siah in Period II, phase ii (Fig. 12,7). Period III (Aj. Tr. II, 1).

BURNISHED GREY WARE

A few sherds of a smooth, burnished grey ware were noted at Anjira. One occurred in Period I (Tr. II, 8); the other two in level 6 in the subsequent period. At Siah a single sherd of grey ware was recorded in the earliest phase of Period II. Since it is not available for comparison it cannot with certainty be regarded as evidence of burnished grey ware on that site though the probability is strong.

The finely-made high pedestal-base, diam. 12.5 cm. (Pl. VI, b) is of exceptional interest. The fabric is very thin and hard fired, the surface highly burnished and soapy in texture. The thin-walled flaring foot is plain, but the stem of the vessel is decorated with finely punctate hatched triangles. The other sherd from the same level (Tr. II, 6) was undecorated.

In the absence of analogies within Baluchistan the unique pedestal-base must be regarded either as an import or an heirloom brought possibly from Iran.

THE CHERT IMPLEMENTS OF ANJIRA, PERIODS I-II¹

Anjira is one of the few sites in Baluchistan in which a pre-Harappan flake-blade industry has been found in a stratified setting. The industry, therefore, assumes an importance rather out of proportion to its quality and quantity. In view, however, of its clearly determined position in the cultural sequence of Kalat, it is necessary to extract what information it contains, and for this purpose to examine it under three headings - the material itself, its relationship to the comparative stratigraphy of Anjira and the sites of Kile Gul Mohammed and Damb Sadaat, and the relationship of these sites to those in the neighbouring regions of Pakistan and Iran.

THE MATERIAL FROM ANJIRA, Fig. 9

Of the 128 pieces examined, almost all were of some form of chert, a few appeared to be of an indurated shale or a schist, and several were of what

1. The chert implements from Anjira were examined by the late Colonel D.H. Gordon who kindly contributed this section of the Report.

may be fine grained quartzite or some similar stone. The flakes which showed signs of working, a nibbling retouch, 14 in number and 12 having possible signs of use, were mostly flake blades. Some of the larger, rather shapeless flakes may have been used as scrapers (Nos. 32-35, 39) and one (No. 7) may be an endscraper on a blade, used as a gouge. There was only one definite geometric, a lunate (No. 1). The remaining pieces were fragments of snapped blades, showing no definite signs either of working or of use, and a number of small chips and trimming flakes—workshop waste—together with a few cores (No. 33) which appear to have been struck in a rather haphazard manner.

The absence of geometric types suggests a neolithic assemblage in which such implements, apart from the occasional lunate, have been discarded. In view of the relatively small quantity of material available for study, this is a judgment which may be reversed by future excavation: the archaeological background outlined below tends, however, to support this idea. Very small flakes and chips were recovered at Anjira and if there had been a greater number of geometrics they would have been found. A pseudo-triangle was among the specimens. It is a trimming flake; of the two edges away from the striking point, to one side there is a sharp edge and on the other a thin blunt section of cortex, the third side, distorted by the bulb of percussion, shows the strike marks made in detaching this and the previous flake which covered it. Such triangles are not uncommon and can be most misleading. True triangles can be recognised by the fact that they are made from a flake blade, the long side being one margin of the blade, the other two sides being produced by nibbling across the blade from a point on the opposite margin. Faults in the stone have produced small awl-like points (Nos. 2-5) standing up from the flake margin, and there are a fair number of hinge fractures (No. 38), some of which have terminated the run of a blade before the end of the core was reached.

It is reasonable to suppose that this was without doubt a flake-blade industry of neolithic type. A long guiding flake of rather flat section (No. 28) is typical of these industries, and it is probable that the people of Anjira who used these flake-blades struck off as long a blade as the material at their disposal allowed. Some blades were worked near the butt as blunting for a finger-grip, others were used without such improvement and a few only show blunting along one margin of the blade to accommodate a slicing pressure of the forefinger. Blade sections could have been used as sickle blades, but there is only one example (No. 8) to show that they were ever used in this way. Flake or chip points were probably utilised

as arrow-heads, though proof-positive elements such as tangs or barbs do not exist. One good leaf-shaped point (No. 5) shows the small signs of

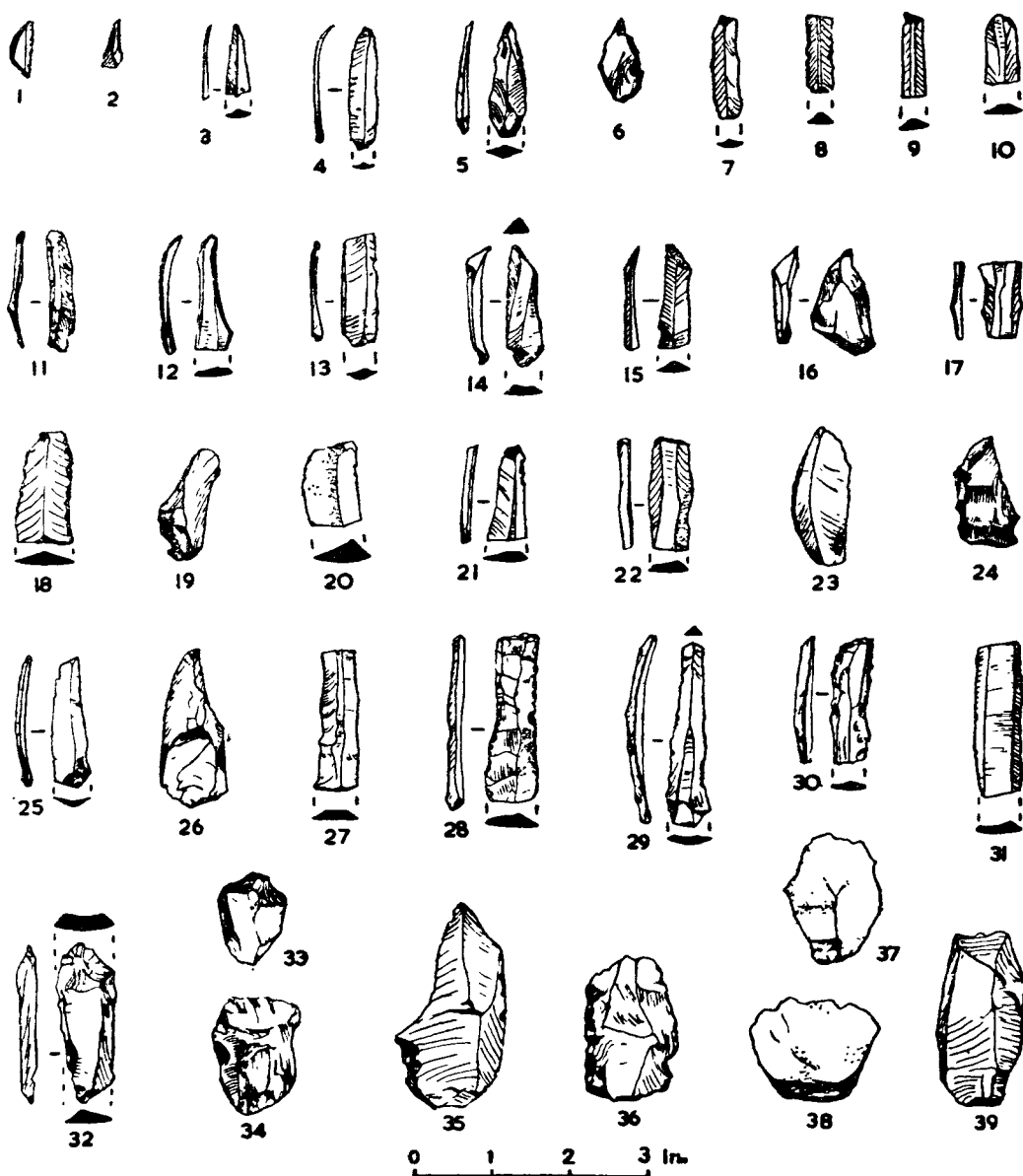


Fig. 9. Chert implements from Anjira

improvement at the point which are present in most flake or chip points which are off-centre when struck and need to be corrected.

THE COMPARATIVE STRATIGRAPHY OF SITES IN BALUCHISTAN

The excavations carried out by Dr. W.A. Fairservis, Jr., at Damb Sadaat and Kile Gul Mohammed brought to light a fair amount of comparative

material in the way of flake-blades and scrapers of chert and jasper. The fact that no signs of a stone tool industry were found above the uppermost level of Anjira period II does not justify any far-reaching conclusions. By far the greater number of flakes came from Aj. Tr. I (10) and (11) and Tr. II (8), in Period I, which seems to align itself with Kile Gul Mohammed II. Flake-blades and scrapers are, however, to be found up to Kile Gul Mohammed IV and Damb Sadaat I-II, and it is clear that no cultural change in Baluchistan could have excluded them from the upper part of the Anjira section. The presence of flakes, particularly of workshop waste, in any level in a vertical trench must to great extent depend upon the chance striking of a stone working-site. It is more than likely that extensive horizontal digging would bring to light some flake blades at all levels.

The material illustrated by Fairservis from Kile Gul Mohammed I-IV is of the same type exactly as that recovered from Anjira. Such points as are noted by Fairservis regarding triangular and trapezoidal cross-sections and the curvature of blades are of no real significance as these features are due entirely to the chance fluting of flake scars on the dorsal side of a blade, dependent as a rule on its width, and as regards the curvature this comes automatically from the nature of the core-stone. There is little doubt that in the final stage of Damb Sadaat I there was a change to the production of longer blades and the disappearance of lunates and scrapers. The long narrow awl-like point, formed by nibbling away the margins of a blade, and the deeply serrated blade-sections, used possibly as sickle blades or cotton-carders, found in most neolithic and chalcolithic assemblages in India and Pakistan have so far not appeared on any Baluch site.

WIDER COMPARISONS WITH NEIGHBOURING REGIONS

At the moment studies aimed at tracing the development and typology of stone artifacts from the mesolithic to the chalcolithic, involving the evidence of these Indo-Iranian borderlands, are handicapped by the lack of material from sites where a clear stratigraphical sequence has been determined by controlled excavation. The situation regarding the period under review, say from 6500 to 2500 B.C., is that since the excavation of the Hotu and Belt caves a complete sequence has been established in Iran and a similar though later sequence is demonstrable in India. In the intervening borderlands this is not the case. So far we know of only one mesolithic site in Afghanistan, the Kara Kamar Cave, where unfortunately an early micro-mesolithic culture marked the final occupation. In Baluchistan and Makran not a single mesolithic site has been recorded and in Sind and

the N.W. Frontier Province of Pakistan only a few sites in the Karachi and Hyderabad districts and the Jamalgarhi Cave site may prove to be of mesolithic rather than neolithic type. (At the Sind sites of Pandi Wahi, Ghazi Shah and Arabjo-thana, flake-blades were found in association with Amri and Togau sherds.) The reconnaissance of Stein and others in Baluchistan, Afghanistan and Makran were aimed at recording settlement sites marked by mounds of occupation debris and the chances of the fortuitous discovery of mesolithic sites, usually associated with caves or rock shelters, was small.

In India, regardless of date, assemblages of geometric microliths are clearly in a different cultural setting from the neolithic or chalcolithic flake-blade industries, and though the diffusion of the latter can now be clearly demonstrated, the manner in which the former came to India is still less a matter of knowledge than conjecture. Whatever is found in the earlier levels of sites in Baluchistan can be traced to influences that came by the western passes from Iran, but it is probable that the more advanced technique of longer flake blades and the discarding of small scrapers, such as is discernable in the stone equipment of Damb Sadaat II, was introduced by contacts with the Harappa culture. It would therefore be interesting to know whether the larger blades resulted from a more efficient handling of the local material or whether core-stone more suitable for their production was imported.

The material from Anjira is most nearly paralleled on the Iranian side by that of the neolithic levels of the Ghar-i-Kamarband, the Belt Cave, and of Sialk I to III; it not being until Sialk IV, when very long blades came into use, that scrapers were apparently discarded. It is possible therefore to link an assemblage of the kind found at Anjira both with the early hand-made pottery cultures of Iran and with the more advanced wheel-thrown of Sialk III, and influences from Iran probably penetrated the borderlands from very early times. Three main cultural waves, or possibly only eddies, affecting the Baluch area can be discerned; a neolithic one bringing hand-made pottery and a modification in scope to an already existing pre-pottery microlithic industry between 3200 and 3100 B.C., a semi-chalcolithic one between 2900 and 2800 B.C., bringing a new people, or at any rate potters who introduced a new fashion of wheel-thrown wares, and finally intrusions from the Harappa culture of Sind producing longer flakes-blades and in some places import wares from about 2350 B.C. onwards. In our present state of knowledge this is all the information that can be extracted from the industry recovered from Anjira.

THE POTTERY CHARACTERISTIC OF PERIOD III

At both Anjira and Siah-damb a period of transition was noted in which new architectural techniques appeared and the pottery of the earlier periods gradually gave place to different wares. On neither site was there evidence of destruction or conquest, and it is not possible to say whether the new styles do more than reflect changes taking place on the wider front of the Iranian plateau. The introduction of Togau-ware (below, p. 132) could represent either ceramic development within the Kile Gul Mohammed culture or renewed contact, possibly at second-hand, with a common cultural stock in north-eastern Iran.

Associated with Togau-ware in the first two phases of this period at Siah were bichrome wares of Amri-Kechi Beg type. The term 'bichrome' is here used to denote decoration in black/brown outlines with red as an ancillary colour, as distinct from the true polychromy of some Nal ware. The relation of these bichrome wares to Togau is difficult to determine. Superficially, they are artistically distinct and contain few of the more popular Togau elements, apart from bands of wavy spirals and sigmas (Fig. 10, 24 and 26) which are common to both Amri and Kechi Beg wares. Togau designs 12 and 14 occur in reversed form on White-on-Dark Slip Kechi Beg ware in Damb Sadaat I¹ and a buff bichrome sherd from Saiyed Maurez bore Togau hooks.

In Sind there is evidence of partial contemporaneity between Togau C-D and Amri wares at Amri (see p. 117) and at both Pandi Wahi and Ghazi Shah². Both wares are recorded among surface finds from Rajo-dero and Chhuti-jo-kund³. A few Togau motifs occurred with bichrome ware in Mundigak I (Fig. 50, 29*a*) and in Period II (Fig. 51, 32).

At Siah-damb, Togau-ware continued in use alongside the bichrome wares of Amri type deteriorating progressively through phases i-ii and ultimately losing its identity as the result of technical changes in its manufacture, probably inspired by the new black colour-coated ware which appeared during phase iii. A corresponding change can be seen in the bichrome wares which in phase iii are more akin in form and decoration to Nal than Amri. True polychromy does not appear at Siah until this phase and then only infrequently (one sherd in Tr. II, 6, with a lobate bowl), and the majority

1. *Quetta*, Designs 105-6.

2. *Sind*, Pl. XXVIII, 32, 37, 42, 46-7; Pl. XXVII, 11, 15, 41.

3. Krishna Deva and D.E. McCown, *Anc. India* 5, Pl. V, 59 and VI, 61-2.

of zoomorphic and naturalistic patterns, characteristic of the final occupation of both Siah and Anjira, begin only in phase iii. The scarcity at Siah of material more closely comparable to Nundara than Fig. 15, 52, 56 and 59 is surprising, particularly as the style was well represented on surface sherds from Zari, another large mound in the same valley. It is possible that the explanation lies in the brief period of disuse noted within Siah Trench II (p. 111) after the building of the 'podium' in phase ii which could probably be equated with the development of an 'early' Nal (Nundara) style. The division between phases ii and iii in Siah Tr. II is difficult to determine. From the appearance of Anjira colour-coated ware, it is best drawn between 10 and 11, the levels immediately above the 'podium'; levels 5-6, however, mark the appearance of Nal-type bichrome and polychrome ware, and the final stage in the devolution of Togau-ware.

It is of interest to note that Togau-ware preceded the Nal and Kulli levels at Niain Buthi in Las Bela, where trial-excavations were carried out by Stein in 1943. I am indebted to Mr. A. Ghosh, Director-General of Archaeology, Government of India, for allowing me to read the unpublished report on the pottery by Dr. D. McCown.

The wares most characteristic of Period III are described below. Figs. 13-16 illustrate their stratigraphical relation and gradual disappearance or development within the three phases of occupation in Siah Trench II.

TOGAU-WARE

This ware was identified during my first survey on a large mound $\frac{1}{2}$ m. E. of the village of Togau in Chhappar district, about 12 m. NW. of Kalat town. On the basis of its most distinctive motif, a frieze of horns or hooks, it clearly had a wide distribution¹ ranging from Gar near the Iranian border², through central Kalat to Kile Gul Mohammed and Mundigak in the north and extending eastwards down the Mula Pass to Jahan and via Chhuti-jo-kund along the Gaj pass into Sind³. In the Surab valley it occurred on six sites in addition to Siah; five showed signs of later occupation, but a large mound known as Gorpat near Gidar yielded only Kile Gul Mohammed and Togau A-C pottery.

1. A map of Togau sites will be included in Part 2 of this Report.

2. A. Stein, An archaeological tour in Gedrosia, *Mem. Arch. Surv. India*, 43 (1931), Pl. III, Gar. 1.

3. N.C. Majumdar, Explorations in Sind, *Mem. Arch. Surv. India*, 20 (1934), Pl. CXIV, 33, 34, at Logri; Pl. XXV, 11, at Damb Buthi; and Pl. CXVII, 24 and 15, at Ghazi Shah, the latter from Pit 2 with Amrian sherds, Nos. 11, 22, 41, comparable to Siah. Fig. 13. 15. and Fig. 14. 36 and 42.

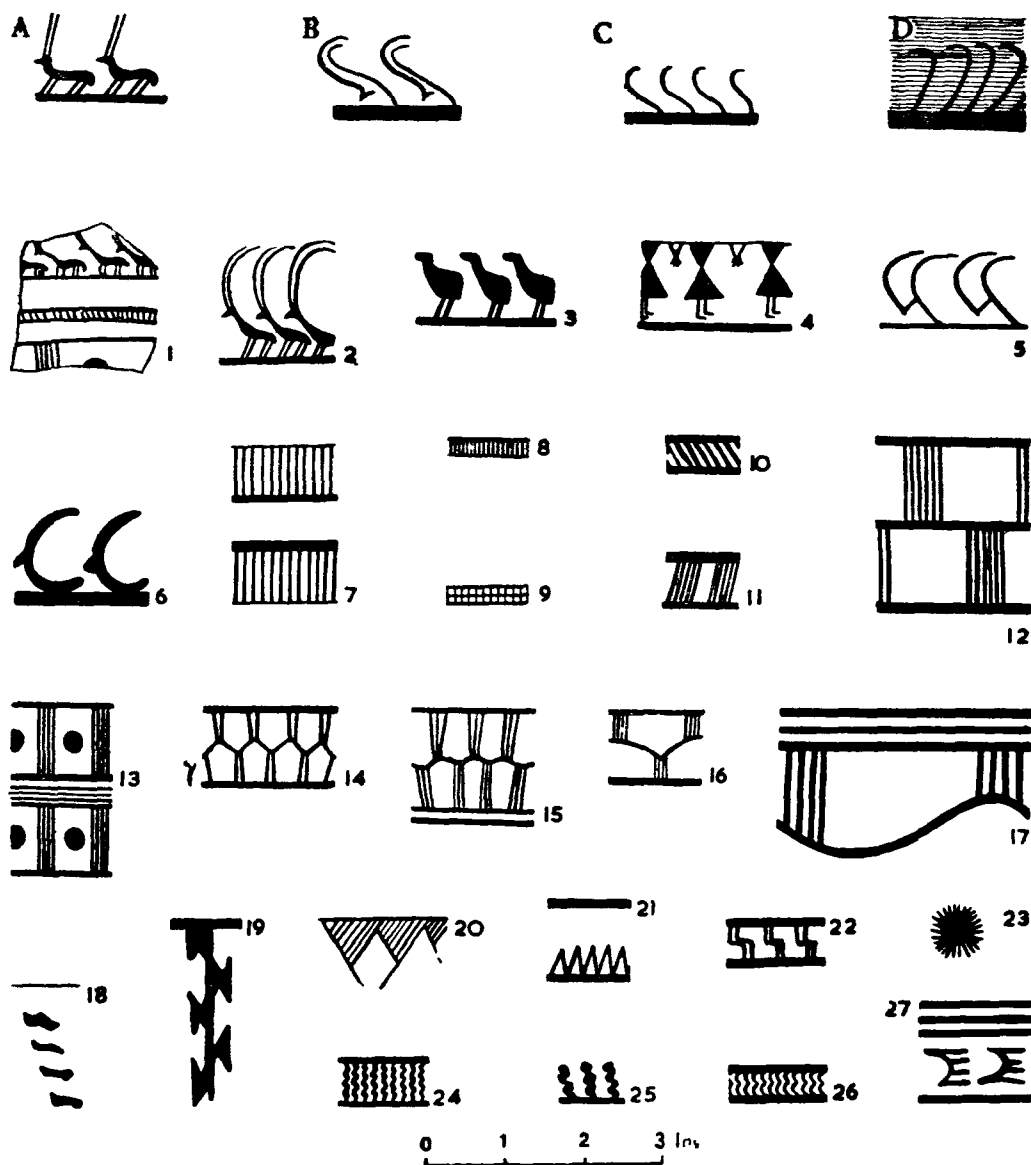


Fig. 10. Togau-ware: typological development and common motifs ($\frac{1}{2}$)

Togau-ware was associated almost wholly with the Period III occupation at Anjira, with only a single sherd from the preceding and later periods. At Siah its devolution in the equivalent period is shown in the three phases of Trench II.

It is a very fine, hard ware, containing no visible grits, usually well-fired and giving a ringing tone when struck. The slip, though thin, is good and does not flake off. It is fired to a full red colour, somewhat more orange in tone than Kile Gul Mohammed ware. In the final stages of its development, the ware is often fired black under reducing conditions.

The forms so far recorded are extremely limited. By far the commonest is an open bowl (Fig. 13, 1 and 6), almost flat at the base, its walls curving steadily more steeply upwards but still not reaching the vertical at the simple lip. The bowls vary in size from about 12.5 - 24 cm. in diameter. All specimens had a slight foot-ring. As explained below, it was possible to distinguish four stages, A-D, in the devolution of Togau-ware. The bowls of Stages C and D (Fig. 14, 20 and Fig. 15, 47) are markedly more globular than those of the earlier stages and appear to be the only form manufactured. Decoration is largely confined to the interior of the bowl, except in the case of some Stage B bowls with external 'stitching' (see below), and very occasionally, either single or triple horizontal lines.

A second form, ascribed to Stage B, is a deep bowl with foot-ring on a hemispherical base, rising thence into a cylindrical or straight insloping body. Again, the size varies from about 5-15 cm. diameter. This form occurred for the most part in the earliest phase of the period (Fig. 13, 9). These bowls were decorated externally and never bore the familiar Togau frieze of horns.

Another Stage B form was a very sharply carinated bowl (Fig. 13, 13, 14) with open body and insloping, slightly concave neck - the rim was missing. This form was represented by only two sherds, both from Siah II, i, levels. One was unpainted, the other decorated with finely executed loop-and-tassel design on the neck.

The only other Stage B form was a small globular jar, with short neck about 6.5 cm. in diameter, and small foot-ring (Fig. 13, 2). These were decorated with a black band over the edge of the rim and usually a simple ladder pattern around the shoulder.

Although its range of forms and decoration is limited, Togau-ware is of considerable interest since it was possible at Siah to confirm stratigraphically the development in time shown in the decorative friezes around the inside of the bowls (Table B).

Stage A. In its earliest stage the Togau frieze consisted of a single row of processing animals, usually caprids, but occasionally birds (Fig. 10, 3) and in one instance linked human figures (No. 4). These shadow figures invariably face left and are painted in solid black on a light orange-red slip, often streak burnished over the painted decoration. No stratified examples of Stage A were found at Siah, although such sherds were noted

on the surface. A single sherd with *khankhoor* set above a ball-in-panel motif was found in Anjira III (Tr. II, 1) (No. 1).

Stage B. In this stage the body of the animal is suppressed leaving only the neck, head and horns, occasionally stylised, but always clearly recognisable. Designs of this kind occurred only in the lower levels of Siah Period II, phase i (Tr. II, 15a-b).

Stage C. The heads and horns become simply an abbreviated fringe of single horns or hooks, occasionally reversed towards the right. Designs of this kind were in the ratio of 5:2 of the counted sample, and were most frequent in the upper portion of Sh. Tr. II, 15-6.—i.e. phases ii and iii.

Stage D. The final stage in the deterioration of the Togau frieze is marked by the careless execution of the hooks which are often back-to-front question-marks. The design, now barely visible, is painted in black on a black ground produced by different firing in the kiln—the change coinciding with the introduction of black colour-coated Anjira-ware at the end of Period II, iii. Some black on red horned friezes of Stage C type were found in phase iii, but were exceeded in number by the black on black designs of Stage D. Occasionally some B and C type sherds were black or grey but from their rarity it is likely that this was accidental, unlike the Togau D examples which were clearly intentional.

The *horned frieze* was by far the most frequent form of decoration and occurs as a single row inside the rim of open bowls. Stage B friezes were often used above bands of ladder pattern, with ball-in-panel or loop-and-tassel designs set in a band below. In the later stages, triple bands are used above looped designs (Fig. 10, 16 17). Table B shows the distribution of the horned frieze in Stages B-D within Siah Trench's II, III together with other common motifs, classified below (p. 132) and illustrated in Fig. 10.

Parallel lines rank second to horns as a form of decoration. Most frequent is a single concentric line around the interior of bowls. Double or triple lines, inside or outside, or even a surface completely covered with lines, also occur, usually, but not invariably, with the horned frieze. The pattern was popular in all periods. Unless found in association with more characteristic designs this motif cannot easily be assessed as it may well apply to other wares.

Ladders were another very common motif, used in the same positions as plain lines, though never multiple. Two bands of ladder pattern (Fig. 10, 7) was the maximum noted inside a bowl. Double bands are usual on the

		Stage B	Stage C	Stage D		Parallel lines	Ladders	Panels	Ball in panel	Loop & tassel	
Tr. II	I		10	7		2					Period
	2		3	5		9				I	II, phase iii
	3		I	5							
	3a			I							
	4		I	5							
	4a		I	I			I				
	4b		2							I	
	5		2	5							
	6		7								
	7										
	8		I	I							
	9										
	9										
	10		2								
	11		7	3		7	I				II, ii
	12		14			11	3		I		
	15		11	I		12	7	3			II, i
	15a	9	26	I		6	58				
	15b	11	26			26	48	11	12	3	
Tr. III	4		4	I							II, i
	4a	4									
	7	I									
	10						2	I	I		
	11										
	12										I

Table B. Quantitative analysis of Togau motifs in Siah, Trenches II and III

outside of straight-sided bowls. They were common in Togau B but became rare later when they appear to give place to simple lines. A single narrow band of ladder pattern is sometimes used to separate the animal frieze from the ball-in-panel pattern inside a bowl (Nos. 1 and 8). Occasionally, the band is bisected (No. 9), a motif common on early bichrome and black on buff wares of Amri type.

Hatched panels were a variant of the ladder pattern in which the 'rungs' are set diagonally (No. 10) or grouped in pairs, threes or fours with short intervening gaps (No. 11). This pattern occurred in Togau B in the ratio of 1:4 with the ladder pattern. A double row with opposed groups of 'rungs' (No. 12) is a further variant.

Ball-in-panel is a variant of No. 12, relying for effect usually on groups of four 'rungs' (No. 13) containing a black circle though a single 'rung' is also found (Fig. 14, 24). The design is used inside the lower portion of bowls or on the outside of jars. It is a distinctive pattern with a wide distribution. A dozen examples occurred in Siah Period II, phase i, one in phase ii.

Loop-and-tassel is a design reminiscent of netting composed of a sinuous line with either 2 or 3 vertical dashes connecting the tip of each loop to the enclosing parallel lines (Nos. 14 and 15). It was used on the outside of jars, on the shoulder of carinated bowls and inside open bowls. At Siah it occurred in all phases, though rarely. No. 16 appears to be stylistically later, perhaps Togau C, leading to the gently flowing line with widely spaced dashes on No. 17—there is no stratigraphical evidence in support of this suggestion as both sherds came from the surface of Zari-damb, another mound near Siah.

Crochet—a straight line with a row of small loops attached below, was used as a subsidiary design element inside bowls. It was found in all phases, though rarely. The same motif occurs on pottery of Amri type (Fig. 14, 33).

Fringe—a variant of the ladder pattern with the rungs stopping short of the second bar. Togau B.

Stitching—a vertical row of short horizontal dashes on the outside of bowls (No. 18). The motif compares closely with contemporary examples on Kile Gul Mohammed bowls. Togau B. *Lacing* reminiscent of a football boot (No. 19) was used inside Togau B bowls. Pl. VI, 6, is a further B version of this crossbar motif.

Motifs more characteristic of Togau D included fringed hooks set above multiple bands (Fig. 15, 46), large fringed swags (Fig. 15, 44), and hanging lentoids, plain or horizontally banded and suspended from triple bands below the horned frieze (Fig. 15, 45). The motif is perhaps an adaptation of the lentoids in Kechi Beg and the bichrome ware of Siah II, iii (Fig. 16, 12).

Surface finds from other sites in the Surab region included a banded zigzag (Fig. 10, 21), a double-stepped band (No. 22), and a multiple rayed rosette (No. 23). The fine wavy vertical lines set between bands (No. 24) occur also on early bichrome ware (Fig. 13, 15). A larger spiral rising from a single band is also used as frieze inside bowls (No. 25). The motif is probably early in the Togau sequence since it occurs on Jangal Painted, Var. 2¹. Another variety of this ware produced an example of the horned frieze². Both sherds are ascribed to the upper levels of Sur Jangal I, in which late Kile Gul Mohammad ware was present, and underlying 'bull' pottery of Rana Ghundai II type. The sigma band (No. 26) is found on Amri, Kechi Beg and the early bichrome wares at Siah (Fig. 13, 16). Design 27 appears to be a late adaptation of the sigma pattern.

The relationship between Kile Gul Mohammed and Togau ware, and their affinity to the cultures of north-eastern form is discussed above. (p. 132).

OTHER MONOCHROME WARES

It is clear from the evidence at both Anjira and Siah that cream-slipped pottery only came into full use during Period III. At Siah it occurred in Trench II during phase i, together with Kile Gul Mohammed and Togau-wares, from which it is stylistically distinct. Its relation in phase ii to another red-slipped ware, not identifiable as Togau, is less certain. As explained below, the cream-slip served equally as background for designs in black or bichrome and the occurrence of similar motifs on red-slipped pottery in the same horizon at Siah and on such sites as Amri, Ghazi Shah and Pandi Wahi suggests that the red and cream-slipped pottery form a single group. While decorated sherds of this kind formed only a small proportion of the pottery of phases i and ii, the cream-slipped appeared more plentiful.

The ware was fine and hard, with occasionally an eggshell thinness as in Fig. 13, 16. Slips ranged from an opaque cream to a watery buff; red slips were less orange in tone than Togau and never showed signs of burnishing.

1. *Zhob*, Design 110.

2. *Ibid.*, Design 69.

The range of forms recovered was limited. Most common in Siah II, phases i-ii, were globular bowls with tapering and either straight or slightly out-turned rims (Fig. 13, 19, and Fig. 14, 33, 34). These were comparable in shape and decoration to Amri pottery from the type-site and elsewhere in Sind. The Siah bowls (Fig. 14, 29, 32) curved in more sharply towards the base than the Sind examples.

Decoration was wholly geometric in phases i-ii, executed in either brown or black, and characterised by fine brushwork. Motifs include bands of sigmas (Fig. 13, 16, Pl. VII, 3), panels of cross-hatching divided by a vertical ladder (Fig. 14, 32), hour-glass dividers with fine horizontal lines set against outlined lentoids (Fig. 14, 37), and bands of ladder pattern, either vertical or diagonal, frequently bisected by one or two lines around the neck of the bowl (Fig. 14, 34). Hanging spirals (Pl. VII, 1) and a 'crochet' loop suspended from a band (Fig. 14, 33), similar to Togau motifs, are also found. Triple horizontal bands were often used to define the lower limits of the design zone (No. 29, 32). Occasionally, a dark band occurred inside the rim, a practice which became more frequent in Period IV.

As in the case of the bichrome pottery, a change was noted in the form and decoration of the monochrome ware of Siah II, phase iii, which relates it to the pottery of Anjira, Period IV, with which it will be discussed.

EARLY BICHROME WARES

Associated with Kile Gul Mohammed and Togau-wares in Siah II, phase i, were two varieties of bichrome ware. One group was cream-slipped with geometric patterns in black/brown and bands of light red or apricot infill. The other was red-slipped, with reserved zones of lighter tone from which the slip had been wiped or in some cases a creamy white paint added to serve as background for a linear design. This material was scanty, but when considered with the associated black on cream or red-slipped wares (which would have been classified as 'bichrome' had a secondary colour been present on the sherd), it formed a group comprising a number of the elements found in Amri-ware.

There is a tendency to regard Amri-ware as essentially cream-slipped, but of the 34 examples illustrated by Majumdar from the type-site¹, 13 are in fact red-slipped and clearly comparable in all respects to the cream-slipped pottery.

1. *Sind*, Pl. XVIII.

At Siah the main divergence from Amri-ware appears in phase iii when the cream-slipped ware becomes stylistically closer to Nundara and Nal, and a coarser version of the colour-slipped ware with reserved or white bands is used mainly for large jars. The term 'Zari-ware', from the site near Siah on which it was first noted in quantity, is used to distinguish this ware from the finer version current in phase i and to facilitate reference to it.

CREAM-SLIPPED BICHROME WARE

A hard, wheel-made buff to reddish ware, smooth and free from visible grits, usually with a good cream slip, though in one instance (Fig. 13, 11) an orange-red slip was noted inside a vessel of medium thickness with external cream slip.

This ware did not occur in sufficient quantity to provide much information as to forms though fine beakers and deep cups were noted. A bowl on foot-ring with low body and fairly high cylindrical walls decorated in black with apricot infill occurred in phase ii (in Pakistan, unillustrated).

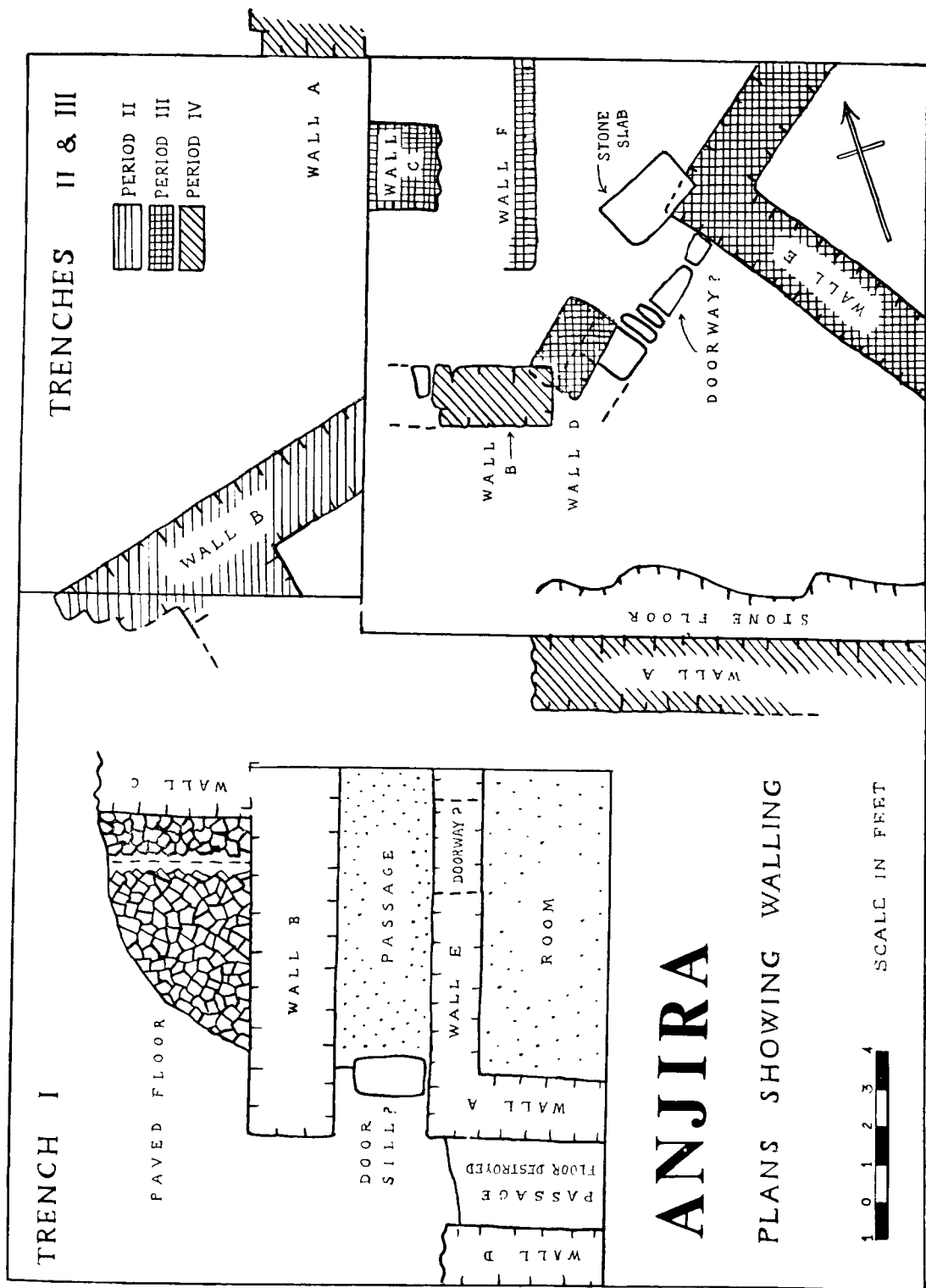
Decoration consisted of geometric patterns, often quite elaborate, in black/brown paint with reddish infill applied either as a simple band around the neck or body of the pot, or incorporated into the design. In the earlier levels this red was more apricot in tone and quite distinct from the deep plum red used in Anjira Period IV and Siah, II, phase iii, and it is probably significant that it occurred usually on very thin wares in the earliest phase of Siah II, with only a few sherds in phase ii.

Common motifs were triangles, hatched either horizontally or diagonally, and sometimes bordered by a chevron band of infill (Fig. 13, 11), the 'crochet' pattern noted on Togau-ware, and diagonally hatched joined diamonds of the kind common in Amri-ware¹. One exceptionally thin sherd incorporated lentoids against horizontally hatched dividers on one side and red infill flanked by a panel of vertical sigmas on the other (Fig. 13, 12). Lentoids and hatched dividers occurred in phase ii on a small black-on-red beaker, not identifiable as Togau-ware (Fig. 14, 37). A similar sherd was found with Amri pottery at Pandi Wahi².

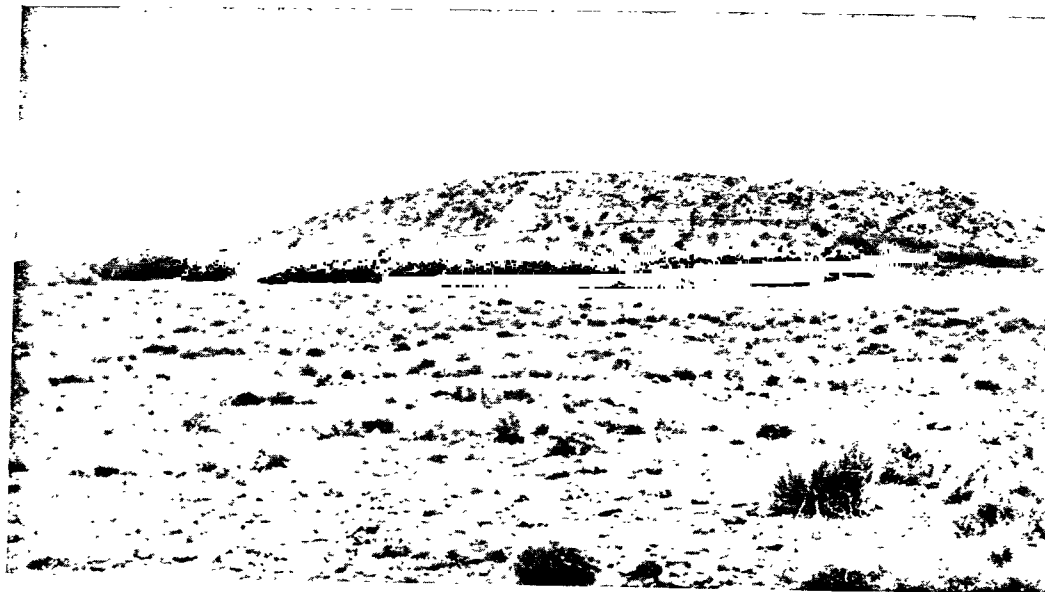
Other motifs were a 'ladder' bisected by a single horizontal line around the neck of a small straight-sided bowl (Fig. 14, 39), a design also common on black-on-buff ware bowls of phase ii. A similar Amri sherd was found

1. Cf *Sind*, Pl. XXXVIII, 8.

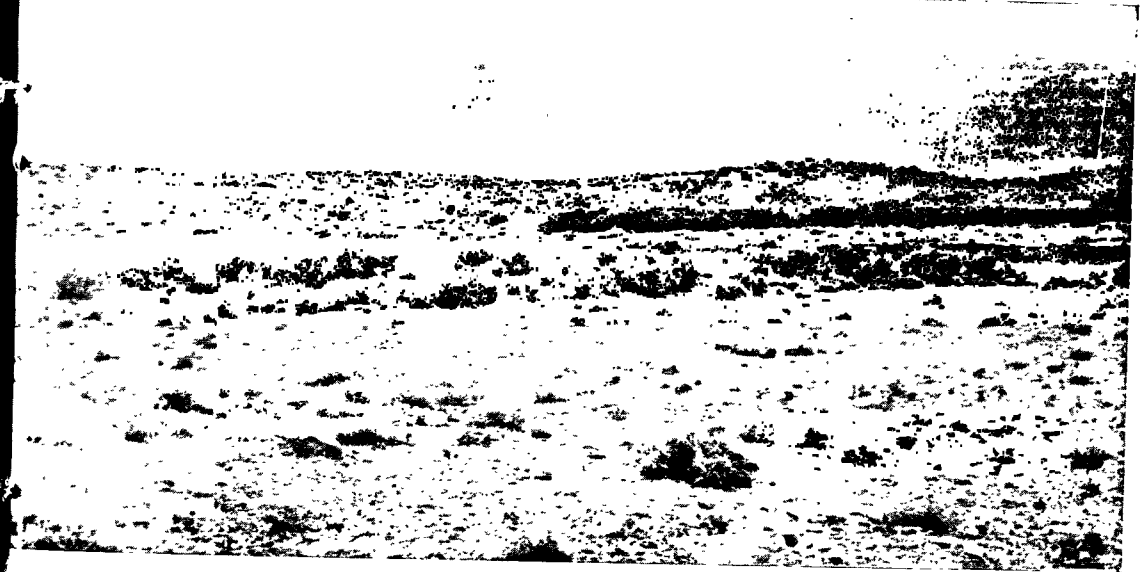
2. *Ibid.*, Pl. XXVIII, 9.



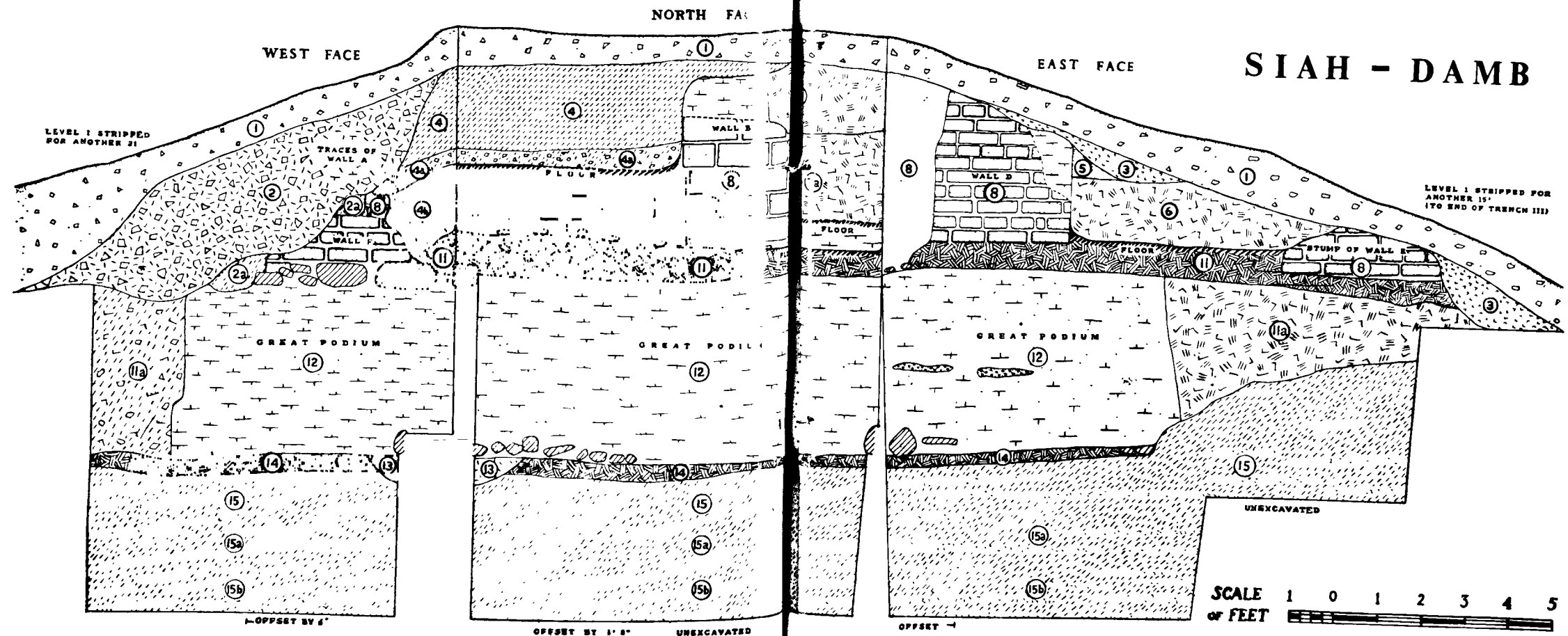
Anjira: plans showing walling.



(a) Anjira: view from the river



(b) Siah-Damb, Surab: Trench II, sections of West, North and East faces





(a) Anjira: Cliff-face showing masonry of Periods II and IV



(b) Anjira: Well



(a) Carn near Anjira



(b) Anjira: Trench I, mud-brick work on wall B



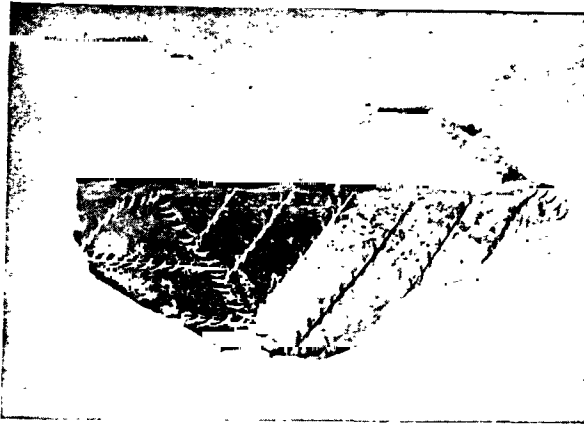
(a) Anjira: Trench I, Walls A and E, with door-sill at the end of the corridor



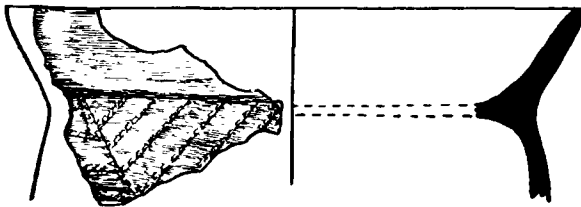
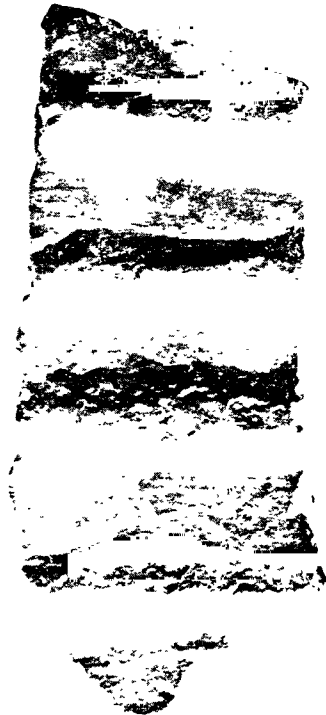
(b) Anjira: Masonry of Period IV



(a) Siah-Damb, Surab: General view



(b) Burnished grey ware bowl from Anjira
(with section)



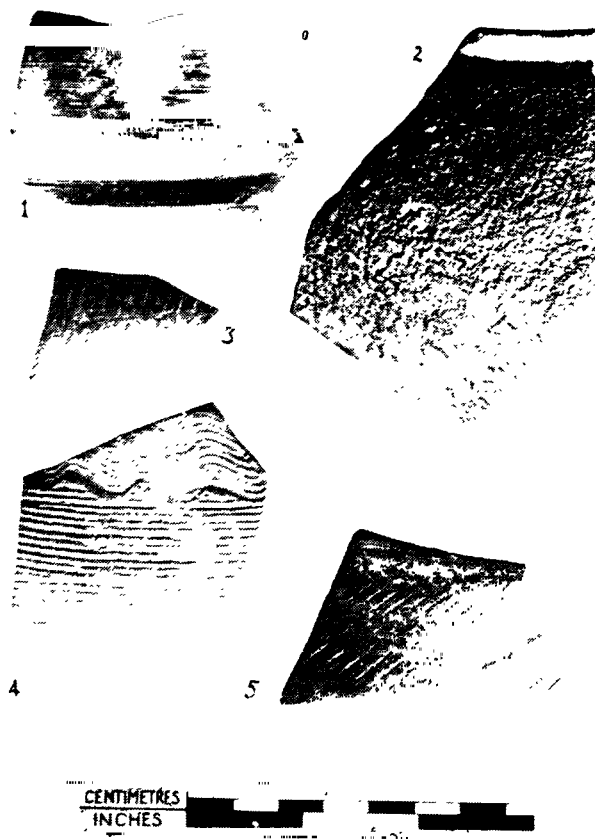
(c) Ridged sherd or tile, Siah-Damb



Pottery of periods III-IV: Togau, Nos. 4, 6, red bichrome, Nos. 2, 5, monochrome, Nos. 1, 3, Zari No. 7, Nal, Nos. 8-15

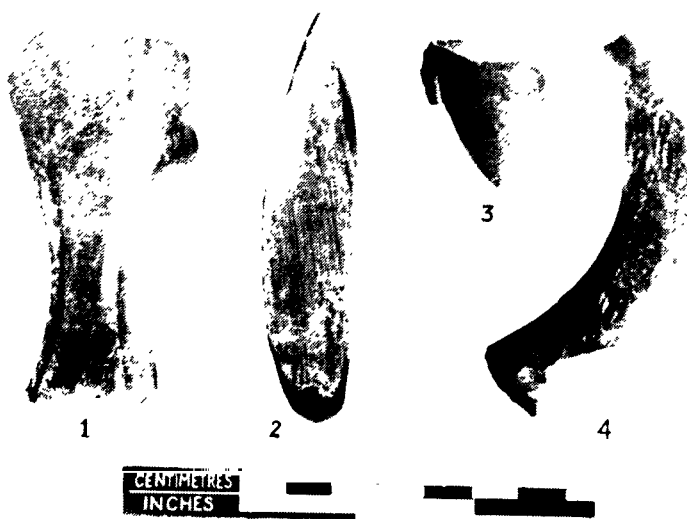


Representations of snakes on pottery of period IV from Anjira
and Siah-Damb



(a) Pottery of Anjira IV and V

- | | | |
|----------------------|----------------|---|
| 1. Cordoned. | 2. Granulated. | 4. Periano Reserved Slip ware. |
| 3. Periano Wet ware. | | 5. Striations beneath Anjira-ware slip. |



(b) Figurines and pottery objects

in Pit 2 at Ghazi Shah in a level immediately preceding one containing a Togau C sherd¹.

The range of early bichrome motifs may well be wider for the classification is an artificial one depending largely on the presence of red infill to distinguish the sherd from black-on-cream ware and the additional designs described under that head should be considered in the present context.

An appreciable change can be seen in the form and decoration of the bichrome ware of Siah, II, phase iii. The open foot-ring bowl (Fig. 15, 52) finds no parallel in Amri and is closer to, though more everted, than Nal form 3. The shoulder of a Nal canister, with true polychrome decoration red, green and yellow was found in Siah Tr. II, level 6, with a sherd bearing the legs of an animal infilled in green. These later polychrome and bichrome wares clearly fall within the pottery characteristic of Anjira IV and will be discussed below.

RED-SLIPPED BICHROME WARE

Only a few sherds of this ware were found in Siah II, i. These were notable for the thinness of the hard, wheel-made reddish ware in which minute white grits were visible. The terra-cotta slip was fairly thick and sufficiently deep in tone to contrast with the reserved band from which the slip had been removed. In the case of the narrow-mouthed goblet (Fig. 13, 15), faint traces of cream or white paint remain below the black zigzag pattern on the reserved zone. It is surprising that with a vessel of this type an attempt should have been made to decorate the inside of the goblet in the same style. Both form and decoration suggest comparison with Amri-ware. The shape is not recorded in the Kechi Beg polychrome to which this ware is also akin. Sherds of somewhat similar appearance are illustrated from Badrang-damb, Rakhshan, but are not described in sufficient detail to make identification certain².

The red-slipped bichrome ware of Siah II, phase ii, was more plentiful. In general the ware was thicker, even in the case of the small cylindrical goblet with pared sides (Fig. 11, 12). The sigma or wavy lines of phase i do not occur, the emphasis being laid on the contrast between the red slip and white bands or lentoids outlined in firm dark lines. The hatched diamond pattern (Fig. 14, 42) is closer to the Amri-ware from Ghazi Shah than

1. Cf. *Sind*, Pl. XXVII, 39 and 15.

2. *Gedrosia*, Pl. II, 3 and 11.

the type-site where the hatching of the diamonds differs¹ though the general effect is very similar.

ZARI-WARE

As explained above, this designation is used to distinguish the fine red-slipped bichrome ware of Siah II, phases i-ii, from the heavier ware decorated in a similar style which occurred in Siah II, phase iii, and Anjira Periods III-IV, to which the name is given.

Zari-ware is a hard, wheel-made, reddish buff ware with large grits. It is slipped about equally commonly in black or red, the slip being thick but liable to flake off, carrying any painted design with it.

The most usual form is a globular jar of medium size with the in-sloping shoulder vertically thickened into what is virtually a very short vertical neck (Fig. 11, 1-3). A jar with thinner walls and swollen curving neck (No. 4) and a wide hole-mouth vessel (No. 6) were found at Anjira on the surface and in a Period IV level respectively. The latter seems clearly to be an adaptation of the hole-mouth jars more common in Anjira colour-coated ware. Less common was a vertically walled cup or bowl (No. 14), and a wider bowl with straight sides sloping slightly outwards to a flared lip (No. 15). Both forms were usually greyish-black slipped, with horizontal bands of bluish-white edged in black extending from below the lip to the point at which the bowl curved towards the base.

The characteristic feature of this ware is the white line with black outlines². On a black slip the white often appears distinctly bluish; the red-slipped bichromes of phases i-ii had a creamier and more opaque ground. The colour of the slip varied considerably on the larger jars, ranging from reddish-brown to greyish-black, while a tan red was used on a surface sherd from Siah. The commonest design, particularly on the red-brown slipped jars, consisted of a series of contiguous scalloped curves, the black-edged white loops producing a fish-scale pattern (No. 9). Another fairly common motif was a wide, straight band with hatched or cross-hatched joined diamonds set on the white reserved ground in fine lines (Pl. VII, 7, and No. 4 and 11). Occasionally the Zari-band is simply barred (No. 8) or chevron-hatched. A wavy white line, unedged, also occurred on a black slip. Two, three or

1. Cf. *Sind*, Pl. XVIII, 26 and 31, both red-slipped, and Pl. XXVII, 41 and 44.

2. Professor M. E. Mallowan has drawn my attention to certain Jemdet Nasr sherds which are similar to Zari-ware both in design and their use of white paint.

four horizontal lines were used on the hole-mouth jar (No. 6) and on the straight-sided cup and bowl (Nos. 15 and 16).

A small group of dark slipped wares appeared to be distinct from Zari-ware in using a thin white band without the usual black outlines. Two forms were noted: one a medium thick bowl with gently curving walls, the other a large shallow bowl with nail-head rim. The bowl (No. 14), of which several examples were found both at Siah and Anjira, was decorated with five streaky bands of varying thickness around the rim. Bowls of this form with white lines on a black slip were found at Nal¹ but without having handled them it would be dangerous to press the comparison. The thick white swags inside the shallow bowl (No. 10) are similar to one from Nal².

Fig. 11

1. Rim of vertical lip jar in pink-buff, grog-backed ware with dark brown bands on a smeary light brown slip. A bluish-white paint is applied over the brown slip to form two bands; a panel of diagonally hatched diamonds is painted in dark brown on the whitish ground of the lower band. Zari-ware (Sh. II, 4a).

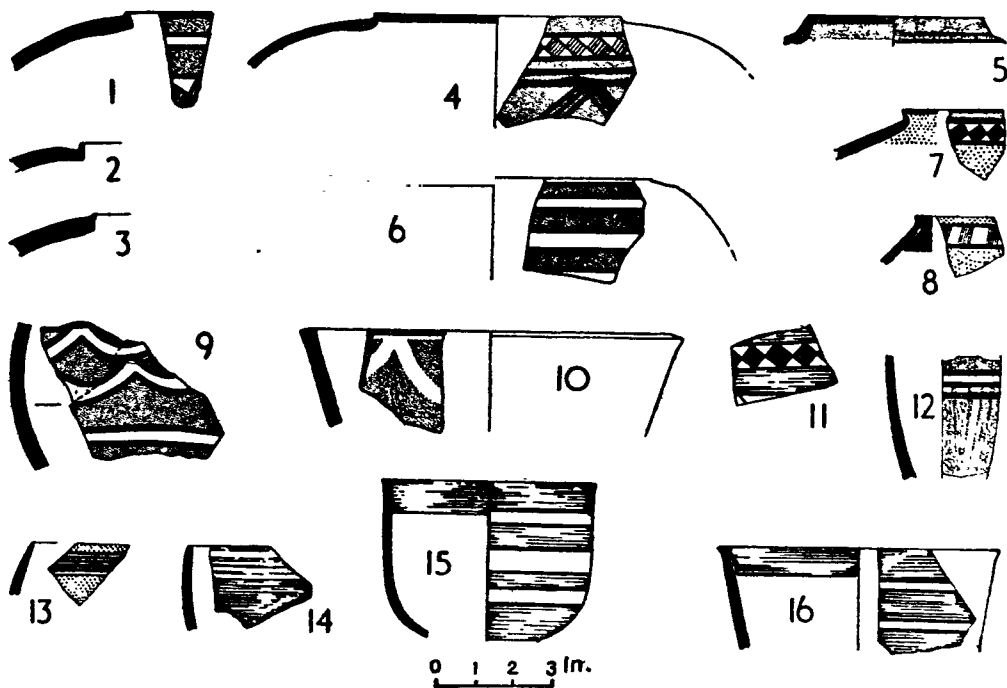


Fig. 11. Zari-ware

1. *Nal*, p. 46.

2. *Ibid.*, Pl. XVIII, 4.

2. Rim of vertical lip jar in grog-backed red ware decorated outside with a combination of dark brown bands and smeary greyish-brown paint on the red fabric. Zari-ware (Sh. II, 5).

3. Rim of slightly reeded square-lip jar in thick grog-backed red ware with light reddish-brown slip externally, and opaque white in a horizontal band outlined with dark brown lines; a dark brown band at the neck covers the lip of the jar. Zari-ware (Sh. II, 2).

4. Jar in red ware with slight greyness due to poor firing. The rim is swollen internally at the neck and slightly beaded, diam. 16 cm. Brown slip externally with black paint and an infilled band of bluish-white offsetting the diamond pattern. Black band at rim. Zari-ware (Aj. surface).

5. Rim of jar, diam. 11.5 cm., in smooth, hard, but unevenly fired, buff ware with brown slip externally and bands of black. Light brown slip covers the neck internally. Zari-ware (Aj. I, 5).

6. Large hole-mouth jar, with slightly beaded rim, diam. 21 cm. The shoulder marks a change of angle. Smooth, hard, close-textured buff paste. Light brown slip with dark brown bands infilled with brown, darker than the slip but lighter than the containing bands. The slip continues over the rim to form a contrasting band on the buff interior. Rims of similar form and decoration were found in Siah II, 4a and 6. Zari-ware (Aj. I, 5).

7. Rim of an everted lip jar in buff ware, with tan red slip extending inside the neck of the vessel for 3.5 cm. External decoration consists of a black band at the rim with a panel of cross-hatched diamonds set on a reserved background between black bands. The body slip is maroon externally. Zari-ware (Sh. surface).

8. Rim of jar in worn red ware, probably with reddish-brown slip externally. Groups of narrow vertical lines on a white-painted border outlined in dark brown around the neck. A smeary black band extends for 3.3 cm. inside the jar. Zari-ware (Sh. II, 2).

9. Two sherds of Zari-ware forming part of a large globular jar. Red ware with shell pattern painted in white between brown outlines and a band of white below externally. Similar designs occur on a dark-brown slip, with white scallops edged with black (Sh. II, 5).

10. Large shallow bowl with flattened square rim, diam. 25.5 cm., in grog-backed greyish fabric with dark brown slip covering both surfaces. Swags in bluish-white inside suspended from a band around the rim. An unusual feature is the absence of outlining black or brown bands. Cf. *Nal*, Pl. XVIII, 4 (Sh. II, 9).

11. Part of a jar in overfired ware with grey-black slip externally. Finely cross-hatched diamonds on a white painted band and traces of a second white band below. Zari-ware (Sh. III, 4).

12. Small goblet in dense red ware, with vertical paring externally, decorated with brown bands, with opaque white infill between the two top bands. Another example of this unusual ware with more elaborate decoration occurred in Sh. III, 4 (Sh. II, 12).

13. Tapering rim of an incurved bowl with triple bands of bluish-white outlined in a darker colour (Aj. surface).

14. Rim of curved bowl in red ware, with black slip externally, and multiple bluish-white bands around the neck. The same form occurred in this level with triple bands on a black slip. A possibly comparable ware occurred at Nal (Sh. II, 4).

15. Straight-sided bowl with tapering, slightly flared rim, diam. 14.3 cm., the sides curving gently in towards the base. Hard, light grey ware, with distinctive smooth texture. A dove grey slip covers the outside and extends for 2.5 cm. below the rim inside; three horizontal, white painted bands, edge in brown outside. This ware is different in both tone and texture to Zari-ware, but shares with it the use of white infill as a decorative device. It is also found at Burra Kapoto, near Kalat town (Sh. II, 5).

16. Rim of bowl, diam. 18 cm., with outward-sloping sides. The ware is the same as No. 15, but the paste has been overfired to red with a grey core (Sh. surface).

COARSE WARES, PLAIN AND DECORATED

Coarse hand-made ware predominated in the earliest phase of Siah II. The fabric was generally fired to tan rather than buff or red and was occasionally cream-slipped. A similar fabric, incorporating white grits, was used for wheel-made vessels in the same phase. These were often red-slipped.

A thick buff ware with large black grits (Fig. 12, 8) was found in the same horizon. This ware resembles, but is not necessarily to be identified with, Quetta slate-tempered ware which occurred on sites in that region during the period related with the upper levels of Damb Sadaat II—a mature phase of the Quetta culture¹.

Two common forms were noted; a large globular storage jar with simple, tapering rim, and a large straight-sided vessel. Simple geometric patterns were used on both forms. The heavy black swags suspended from a band along the thickness of the rim of No. 1 are closer to Kechi Beg White-on-Dark Slip motifs² than to Nal or Quetta-ware, where the swags are usually attached to a band just below the inside of the rim. Triple diagonal bands meeting at an angle near the rim (No. 10) recall Kile Gul Mohammed ware.

A single sherd in a curious striated sand-slipped, wheel-turned, ware (No. 7) was also found in phase i. This is closely comparable to the red-ware sherd found with Amri ware at Rajo-dero³. A similar fabric was noted in Amri I A-B⁴.

1. *Quetta*, p. 250.

2. *Ibid.*, Fig. 51.

3. McCown, *Anc. India* 5, Pl. IV, 51.

4. Casal, *Fouilles d'Amri*, II, Fig. 43.

Two fragments of what may be either part of a thick ridged vessel or a tile (No. 6 and Pl. VI, C) were found in Siah II, level 15. The ridges were luted to the surface. No other ridged or cordoned vessels were noted before phase iii, when both the shape of the jar and the ridge section differed.

By phase iii coarse wheel-made pottery occurred in only slightly greater quantity than hand-made. The fabric varied as in phase i and jars with large black grits analogous to Quetta slate-tempered ware continued, together with the use of cream and red slips. The globular jars of phase i also continued but the rims, instead of being tapered, were usually flattened and in some cases slightly beaded, reeded or bevelled. Excluding Zari-ware, the majority of the coarse pottery from Siah and Anjira was undecorated. Surface finds from other sites in the Surab region, however, show that the stratified material does not adequately represent this class of pottery which elsewhere reflects the decorative style of the finer wares found at the end of Period III and during Period IV.

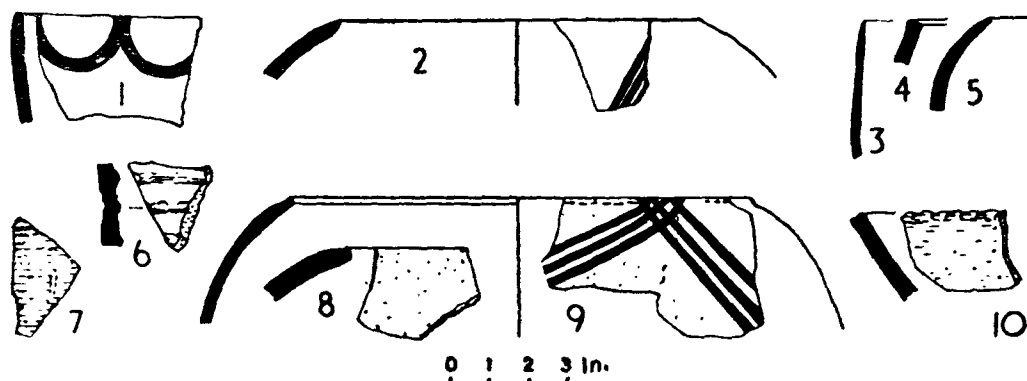


Fig. 12. Coarse pottery from Siah II, phase i

Fig. 12

1. Rim of coarse square-lipped trough, diam. about 43 cm., in gritty wheel-made red ware. The surface is rough and uneven outside but the vessel has been smoothed internally and decorated with black swags suspended from a band along the thickness of the rim (Sh. II, 15).

2. Rim of large incurved bowl, diam. 23.5 cm., in tan ware with white grits, wheel-made and red-slipped. Three or possibly more diagonal black bands from rim externally, probably similar in style to No. 10 (Sh. III, 10).

3. Rim, diam. about 35 cm., of thin, straight-sided vessel in gritty tan ware, hand-made and cream-slipped. The walls appear thin in relation to the size of the pot (Sh. II, 15).

4. Blunted nail-head rim of vessel in gritty wheel-made red ware, with traces of cream slip (Sh. II, 15).

5. Rim of incurved globular pot in grog-backed red ware, probably wheel-made (Sh. II, 15).
6. Part of a ridged vessel or tile. The ridges are applied at about 1.2 cm., apart and luted to the surface. The tile is roughly flattened and has a thick cream slip on its lower, plain surface. Another fragment with 4 ridges was found in the same level. They are unparalleled in Baluchistan (Sh. II, 15).
7. Part of a sand-slipped red ware vessel with shallow horizontal indentations, probably caused by grasses bound around the pot before firing (Sh. II, 15).
8. Rim of incurved pot in thick buff ware with large black grits. This ware resembles Quetta slate-tempered ware (Sh. II, 15).
9. Large incurved jar with slightly reeded flattened rim, diam. 30 cm., in wheel-made cream ware with black grits similar to No. 8. Triple diagonal bands meet at the rim. Siah II, phase iii (Tr. II, 8).
10. Reeded rim of thick trough in grog-backed wheel-made red ware, cream-slipped. The edge of the rim is decorated with diagonal indentations. Siah II, phase iii (Tr. II, 5).

THE POTTERY OF SIAH, TRENCHES II AND III

The pottery of Period III was too scanty at Anjira to provide much information and in view of the importance of the evidence obtained at Siah-damb the ceramic content of Trenches II and III is illustrated in some detail in Figs. 13-16 to show the gradual changes which took place during Siah II, phases i-iii, a period which equates with Anjira III.

Fig. 13. PHASE I.

1. Rim, diam. 24.5 cm., of a curved-wall bowl in dense but unevenly fired red ware, decorated inside with a frieze of double horns in black; 'stitching' externally. Togau? B (Tr. III, 7).
2. Small straight-necked jar, rim diam. 6.6 cm., in fine red-slipped ware with horizontal ladder pattern in black at shoulder. Togau-ware (Tr. II, 15a).
3. Ring base, diam. 3.2 cm., of a small globular bowl in fine reddish-buff ware; undecorated (Tr. II, 15a).
4. Slightly concave base, diam. 4 cm., of a small open bowl in fine hard pink ware with reddish-brown slip. Black 'stitching' and linear pattern inside. The dark tone of the slip is more akin to Kile Gul Mohammed ware than Togau-ware (Tr. II, 15a).
5. Part of a globular vessel, with smeary brownish-red slip and geometric pattern in dark brown. ? Togau-ware (Tr. II, 15a).
6. Open bowl with slightly tapering sides, rim diam. 29.4 cm., in thick rather sandy red ware. Stylised horned head frieze inside above a band of ladder pattern. Togau B (Tr. II, 15a).

7. Sherd from a bowl in thick, rather sandy red ware, with sloping ladder pattern above a panel of grouped double lines in black internally. Togau-ware (Tr. II, 15).

8. Rim of curved-wall bowl in red ware with grey core. Dark maroon slip, probably due to overfiring; pendant cross-hatched triangle in brown inside. ? Kile Gul Mohammed ware (Tr. II, 15a)

9. Rim of a small straight-sided bowl, in fine red ware with ladder pattern in black above grouped vertical lines on a red slip. Togau-ware (Tr. II, 15a).

10. Part of an open bowl in thick rather sandy overfired ware, similar to No. 8. The

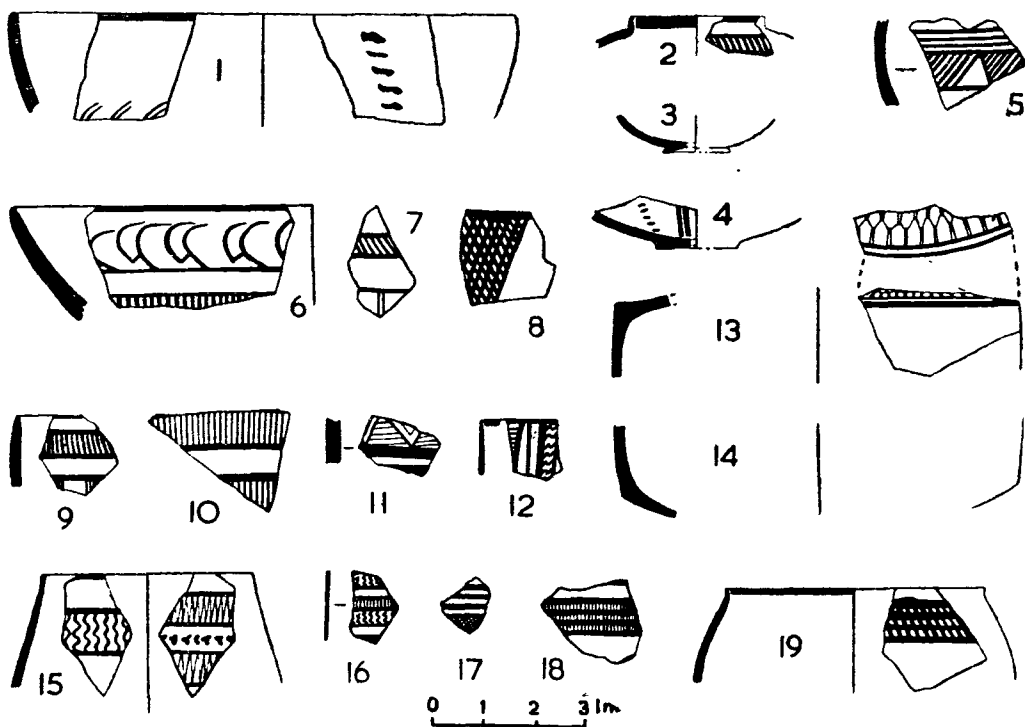


Fig. 13. Wares typical of Siab II, phase 1.

geometric design in mid-brown is barely visible on the greyish-brown slip. ? Togau-ware (Tr. II, 15).

11. Unusual sherd in buff ware, red-slipped internally, with bichrome geometric decoration in brown and red on cream externally. Early bichrome ware (Tr. II, 15a).

12. Rim of cup in exceptionally thin ware, cream-slipped. Although the bichrome decoration in brown and red on cream differs from No. 15 there is a close resemblance both stylistically and in the fabric. Early bichrome ware (Tr. II, 15a).

13. Square-shouldered canister, diam. 20 cm., in buff ware, with burnished red slip. Loop-and-tassel motif on the shoulder; neck missing. Square-shouldered canisters occur in Nal and Kulli pottery but often tend to sag inwards. Togau-ware (Tr. II, 15a).

14. Part of a sharply carinated red-slipped bowl, similar in size to No. 13. It is unlikely that they belong to the same vessel since No. 14 is unburnished. Togau-ware (Tr. II, 15a).

15. (Pl. VA, 5) Rim fragment of distinctive bowl in very fine red ware, unslipped. A bichrome effect is achieved by using a band of cream paint outlined in black as background for a thin zigzag in black. Inside a similar technique is used beneath the zone of vertical wavy lines. Similar, though usually more globular forms, occur in Amri ware (*Sind*, Pls. XXXVIII, 21; XXXIX, 5). Early bichrome ware (Tr. II, 15a).

16. (Pl. V. A, 3) Part of a small cylindrical vessel of eggshell thinness, cream-slipped externally, with alternating bands of ladder pattern and sigmas. Stylistically akin to Nos. 12 and 15. Cf. sherds from Amri, Damb Buthi, Ghazi Shah and Pandi Wahi (*Sind*, Pls. XXXVIII, 1, 6; XXV, 4, 4; XXVII, 20, 21, 29; XXVIII, 42, 46). (Tr. II, 15a).

17. Fragment of a buff-slipped vessel in thin ware, decorated with multiple brown bands and very fine cross-hatching (Tr. II, 15a).

18. Slightly flared rim of a small globular bowl in red ware, cream-slipped, with band of fine linear decoration in dark brown at shoulder. Similar in form to No. 19. Ladder pattern bisected by a single line occurs on an Amri-ware bowl at Ghazi Shah (*Sind*, Pl. XXVII, 39). (Tr. II, 15a).

19. Incurved bowl with slightly flared rim, diam. 12.4 cm., in buff ware, with zone of geometric decoration in brown around the shoulder. Similar to No. 18 (Tr. II, 15a).

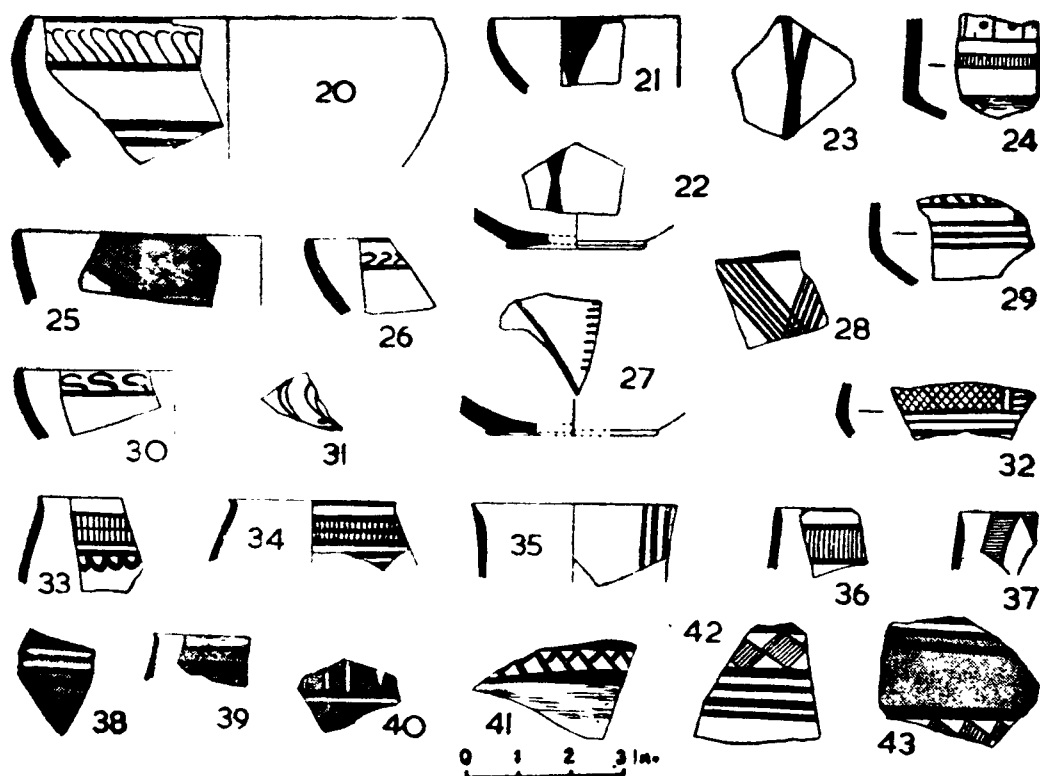


Fig. 14. Wares typical of Siah II, phase II.

Fig. 14. PHASE II

20. Part of a curved-wall bowl, diam. 19.4 cm., in medium-thick buff ware, with streaky reddish-tan slip. Horned frieze and two concentric black bands inside. Togau C (Tr. II, 12).
21. Rim of a shallow bowl, diam. 18 cm., in buff ware, red-slipped, with solid black pendant triangle from band at rim. Vertical tooling externally. Kile Gul Mohammed ware (Tr. II, 12).
22. Ring-base, diam. 6.6 cm., of small bowl, perhaps part of No. 21; with geometric pattern in black inside. ? Kile Gul Mohammed ware (Tr. II, 12).
23. Sherd from a bowl with design similar to Nos. 21-22. Kile Gul Mohammed ware (Tr. III, 4a).
24. Part of a straight-sided, sharply carinated jar, similar in form to Nos. 13-14. Buff ware, with traces of smeary brown slip and Togau ball-in-panel and ladder pattern in black (Tr. III, 4a).
25. Rim of bowl in buff ware, with grey slip and hook frieze in dark brown. Togau D (Tr. II, 11).
26. Rim of bowl in greyish-buff ware, unslipped, with back-to-front hooks in dark brown. Togau D (Tr. II, 11).
27. Ring-base, diam. 8 cm., of a bowl in red ware with light red slip and geometric design in black inside. Two concentric bands and 'stitching' externally. Cf. No. 4, of phase I, though the slip is unusually light in tone. ? Kile Gul Mohammed or Togau-ware (Tr. III, 4a).
28. Sherd in red ware, with dark red slip externally and intersecting multiple black lines below a broader horizontal band. Probably Kile Gul Mohammed ware (Tr. II, 11).
29. Part of a bowl curving sharply in towards the base. Buff ware, cream-slipped. Traces of a poorly executed geometric design in dark brown, with vertical wavy lines within a panel (Tr. II, 11).
30. Rim of buff ware bowl with smeary brown slip, much worn. Hook frieze, Togau C-D (Tr. II, 11).
31. (Pl. VA, 4) Sherd with animal-head frieze, Togau B (Tr. III, 4a).
32. Part of a bowl, similar in form to No. 29. Buff ware, cream-slipped, with fine cross-hatching within a rectangular panel above triple horizontal bands. These lie at and below the curve of the body of the bowl (Tr. II, 11).
33. Flared rim of a small jar in buff ware, with light red slip externally. Both the form and horizontal band of loops below the zone of bisected vertical lines are reminiscent of Amri-ware (Tr. II, 11).
34. Out-turned rim of bowl, diam. 8 cm., similar to No. 19. Buff ware, with geometric pattern in dark brown on cream (Tr. II, 12).
35. Flared rim, diam. 10 cm., of small jar in buff ware, with simple vertical bands in dark brown on cream slip (Tr. III, 4a).
36. Rim of straight-sided bowl, similar in form and ware to No. 9 (Tr. III, 4a).

37. Rim of straight-sided bowl in very thin red-slipped ware, with finely executed hourglass motif. The design is common on cream-slipped vessels in later levels and in Anjira IV (Fig. 17, A 10b). Fringed hourglass motifs also occur in Period IV at Anjira (Fig. 17, A 6a and Fig. 19, 2) on bichrome ware. Cf. a sherd from Pandi Wahi (*Sind*, Pl. XXVIII, 9) found at a lower level than the fringed hourglass motif from the same site (*Ibid.*, 1).

38. Sherd in brown-slipped buff ware, with white infill between dark brown bands. Zari-ware (Tr. II, 12).

39. Rim similar to No. 19, cream-slipped. Horizontal bands of black and crimson above the bisected ladder pattern. The ware is similar to Nos. 11-12. Cf. an Amri sherd from Ghazi Shah (*Sind*, Pl. XXVII, 39). (Tr. II, 12).

40. (Pl. VA, 2) Sherd in red-slipped buff ware, with white infill in a geometric design of vertical dividers and a lentoid outlined in black (Tr. III, 4a).

41. Much worn sherd with brown slip and spicate pattern in dark brown on a white band. Zari-ware. Cf. Amri sherds from Ghazi Shah (*Sind*, Pl. XXVII, 41, 44). (Tr. II, 12).

42. Part of a jar in buff-ware with smeary red-brown slip. A panel of hatched diamonds above multiple horizontal dark brown bands. Similar in style to Zari-ware, though lacking the white ground for the diamonds (Tr. II, 12).

43. Part of a jar in red ware with bands of white edged with black serving as background for a panel of hatched diamonds. Zari-ware (Tr. II, 12).

Fig. 15. PHASE III

44. Rim of unusually wide bowl in well-fired red ware, light red slip outside, but dark brownish-gray inside. The fringed swag pattern in dark brown occurred also in Anjira iv. Togau D (Tr. II, 2).

45. Part of a curved-wall bowl in medium thick pink-buff ware, red-slipped externally. Hook frieze in brownish black above triple bands and barred lentoids on a dark grey background inside. Togau D (Tr. II, 8).

46. Part of a curved-wall bowl with fringed hook frieze and multiple bands in mid-brown on grey inside; smeared grey-brown slip externally Togau D (Tr. II, 6).

47. Small curved-wall bowl, diam. 15.3 cm., with ring-base, similar in fabric and slip to Nos. 45-6 and 50. Togau D (Tr. II, 5).

48. Short-necked jar, with tapered sharply everted rim, diam. 10.5 cm., in fine smooth red ware, buff-slipped. The neck and shoulder bear a bold curvilinear design in dark brown. The ware is the same as No. 51 though the slips differ in colour (Tr. II, 6).

49. Rim of a lobed bowl (similar to *chiragh*), cream-slipped. (Surface). No. 49b has five dark brown bands looped below the lobe with a broad red band inside. Nal Type 14; the pattern is also paralleled at Nal (*Nal*, Pl. XIX, 3). (Tr. II, 4).

50. Rim of shallow saucer, similar in fabric and slip to Nos. 45-7, with looped band in maroon inside. Togau D (Tr. II, 3).

51. Rim of large straight-sided bowl, diam. 33 cm., in medium-thick buff ware with bands of light tan paint at rim and extending for 1.7 cm. inside. There is a further band below the rim externally. This ware resembles Mian Ghundai Dark-Rim Fine ware (Tr. II, 6).

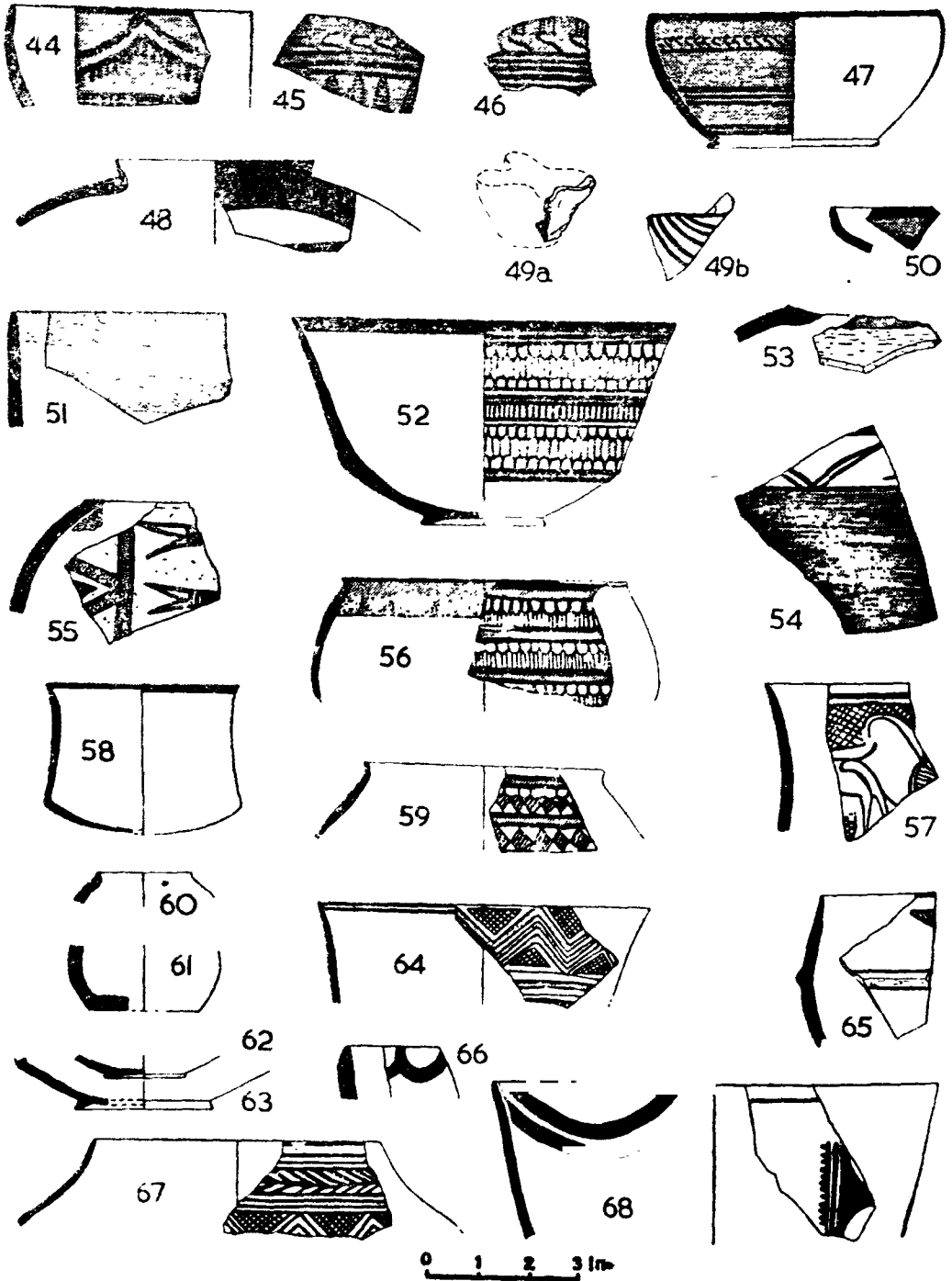


Fig. 15. Wares typical of Siah II, phase III

52. Handsome carinated bowl, diam. 20.5 cm., with beaded, concave base; buff ware, cream-slipped. A variant of Nal Type 3. The geometric polychrome design is skilfully painted in dark brown and russet red. Less elaborate loop designs occur at Nal and Nundara but without the connecting vertical banded panels (Tr. II, 4).

53. Part of a hole-mouth pot with flattened tapering edge and angular shoulder marked by a thin wavy cordon. Dense hard red ware, Anjira colour-coated ware (Tr. II, 3).

54. Part of a large globular jar in gritty buff ware, partially coated outside in the manner of black Anjira-ware below a reserved panel used as background for a simple curvilinear design. Traces of black colour-coating above. The design on the reserved ground is reminiscent of Nal, Pl. XXI, 15, and also a sherd from Kulli (*Gedrosia*, Pl. XXI, Kul. 1, v, 1).

55. Slightly reeded rim of globular pot in coarse, overfired paste, with large grits. The vessel is brick red inside with maroon border at the rim but covered with a dense cream slip externally. Bichrome decoration on so coarse a vessel was unusual on stratified material at Siah and Anjira but was noted on surface sherds at Zari. The tails of two banded and cross-hatched fish are separated from a third by a vertical divider with rust infill (Tr. II, 4a).

56. Globular bowl with slightly beaded rim, diam. 15.3 cm., with bichrome design similar in style to No. 52 (Tr. II, 2).

57. Rim of large flared bowl, cream-slipped. Cross-hatched background blocks follow the line of the main design, a humped bull (Tr. II, 2).

58. Small, bluntly carinated bowl with sagging base and tapered rim, diam. 10 cm., buff ware. The bowl has been badly blackened by fire and no trace of a design is visible. The form compares more closely with an Amri bowl from Pandi Wahi (*Sind*, XXXIX, 13) than with Nal Form 22 which has much straighter sides (Tr. II, 5).

59. Jar with thin everted neck, diam. 13 cm. The bichrome design in brown and plum red on cream combines the looped bands of Nos. 52 and 56 with diagonally hatched diamonds (Tr. II, 2).

60. Rim, diam. 5 cm., of miniature, rather thick hand-made pot, with small holed pierced through the neck. Buff ware; design too worn to trace (Tr. II, 6).

61. Flat base, diam. 6 cm., of a small globular pot in thick buff ware, undecorated (Tr. II, 10).

62. Beaded, concave base, diam. 4.2 cm., of a small thin-walled vessel. Buff ware, undecorated, with part of potter's mark on base; a single incised line (Tr. II, 10).

63. Well-made ring-base, diam. 7.4 cm., of carinated buff ware bowl (Tr. II, 4a).

64. Flared bowl, diam. 18 cm., with bichrome geometric pattern of triple chevrons infilled in plum red, separating opposed cross-hatched triangles. The pattern occurred also in Anjira IV (Tr. II, 2).

65. Tapered rim of curved bowl with cordon at girth. Buff ware, cream-slipped, with simple hatched motif in upper zone and cordon outlined by brown bands. Cf. Black colour coated Anjira form, Fig. 20 No. 14; the form is not recorded from Nal (Tr. II, 2).

66. Tapered rim of thick curved-wall bowl in coarse gritty red ware with dark red slip. Black swag design externally (Tr. III, 4).

67. Part of a thin-walled inverted jar, diam. 15.3 cm., with bichrome geometric design in dark brown with plum red infill on cream slip. The form is not recorded from Nal (Tr. II, 4).

68. Part of a large bowl, diam. 24 cm., with straight sides sloping slightly outwards. Dense hard red ware with buff slip. Decorated inside with double swags in brown at rim; part of double axe motif with vertical fringe externally (Tr. III, 4).

Fig. 16. PHASE III: POLYCHROME, BICHROME AND MONOCHROME SHERDS

Note: Unless otherwise stated, all the sherds illustrated were in a fine buff ware with cream slip.

1. Sherd showing the neck and shoulder of an animal decorated with diagonal brown stripes and red infill (Tr. II, 2).

2. Part of a rather globular bowl. The foreleg of an animal is infilled with red (Tr. II, 2).

3. Globular vessel decorated with addorsed animals, perhaps felines, with raised tails, separated by a panel of cross-hatching. The bodies are infilled in maroon red (Tr. II, 2).

4. Head of a bull and forepaws of another creature. As in Nos. 1 and 5 the neck and shoulders are striped and the eye set in maroon red infill (Tr. II, 2).

5. Head of a caprid, banded in brown, the eye encircled with red infill (Tr. II, 2).

6. Gently everted rim showing the body of a humped bull, outlined in brown, with sap green infill (vertical shading). Vertically banded blocks fill in the background. As in the case of No. 7, the infill is fugacious (Surface).

7. Shoulder of a canister, Nal Type 5, with traces of polychrome infill in red and yellow (Surface)

8. Similar to No. 2. The hindquarters of an animal outlined in brown, with russet red infill. Horizontally banded blocks fill in the background (Tr. II, 2).

9. Globular vessel showing forelegs of an animal infilled in green. The same pattern occurred with red infill and wavy lines in the block between the animal's legs and the opposed motif (Both surface).

10. Carinated bowl in red ware, cream-slipped, with brown and rust geometric pattern (Surface).

11. Lower portion of a bowl, less angular than No. 10, with geometric pattern in brown with red infill (Surface).

12. Rim, diam. 10.4 cm., with panel of lentoids suspended from a narrow band showing traces of red infill. Banded lentoids were also used in Anjira IV and on a sherd from Rajo-dero, a site in the plains near the entrance to the Gaj pass, which contained both Amri and Harappa material and sherds with Nal affinities (*Anc. India*, 5, Pl. IV, 50). (Tr. II, 1.)

13. Petalled floret with inner ring in red. Cf. a sherd with similar motif infilled in red from Anjira (Fig. 19, 1). (Tr. III, 4).

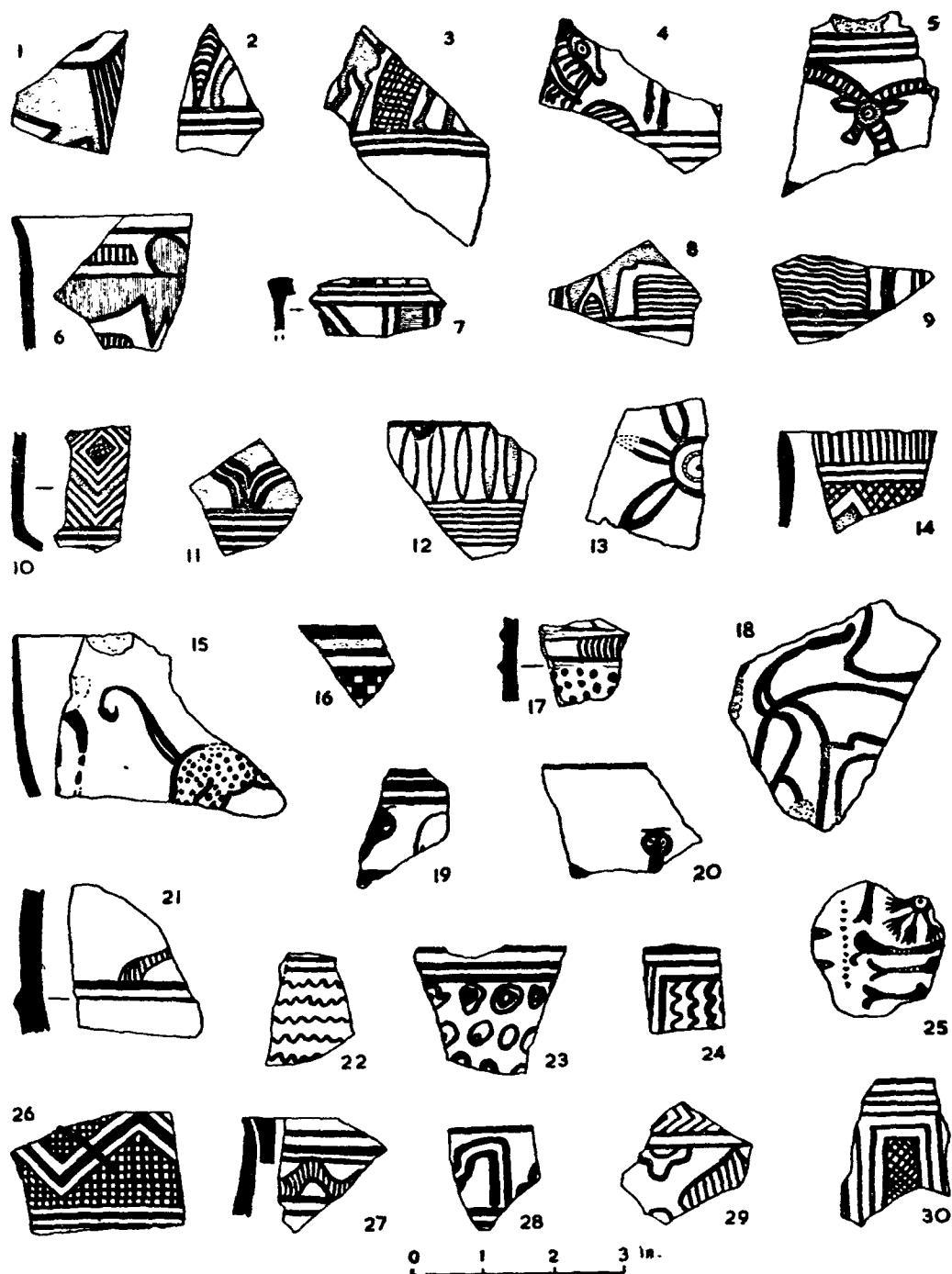


Fig. 16. Decorated pottery of Siah II, phase III ($\frac{1}{2}$)

14. Swollen rim of flaring vessel, with dark brown geometric pattern and red infill (Tr. II, 2).

15. Rim of thin, straight-sided bowl. A spotted feline with upraised, tufted tail on a plain background. (Cf. Anjira, Fig. 17, A6) and *Mundigak*, II, Fig. 63, 159-162, from Period IV, 1. (Tr. II, 2).

16. Rim fragments decorated externally with chequerboard pattern in dark brown with a band of lighter reddish-brown around the neck. Chequered panels were used on medium-thick wares at Zari, near Siah, and at Anjira (Surface).

17. Part of a vessel with double cordons. A vertically banded fish is set in the space between the cordons above a zone of spots. Cf. Anjira, Fig. 19, 11-12 (Tr. II, 1).

18. Globular vessel with outline drawing of an animal with tufted, upraised tail. The plain background blocks, which are generally banded or hatched, are unusual. Cf. the feline from *Nal*, Pl. XXI, 8 (Tr. II, 2).

19. Rim fragment showing the head of a cobra, in dark brown. Plastic and painted snakes occurred at Anjira, but none are recorded from *Nal*. A snake set in cross-hatched background at the feet of a bird of prey was noted among surface sherds at Siah-damb (Ander-Damb) (*Field*, Fig. 25, 10). (Tr. II, 1).

20. Rim fragment similar to No. 19 (Tr. II, 4).

21. Relatively thick cordoned vessel, the design zone set above the ridge and showing a banded forepaw. The vessel was similar to *Nal* Form 8 (Tr. II, 6).

22. Sherd with multiple horizontal wavy lines in light brown, a geometric pattern which occurs at Nundara and Zik (*Gedrosia*, Pl. XXV, Nun. 2, and Pl. XXI, Zik, 2) and at Zari (Tr. II, 5).

23. Rim of bowl similar to No. 27, with irregular circlets in dark brown below triple horizontal bands. The design occurred at Anjira, Fig. 17, A 10d, and may be a decadent version of the double diamonds of *Nal*, Pl. XVII, 40 (Tr. II, 1).

24. Sherd in red ware, cream-slipped, with geometric pattern incorporating wavy vertical lines within a rectangular panel. Cf. Nundara and Bazdad, *Gedrosia*, Pls. XXVI, Nun. 30 and XXIV, Baz. 5 (Tr. II, 2).

25. Sherd in medium thick ware, with grey-buff slip. The elongated, vertically banded bodies of the three fish correspond with triple fish on cordoned vessels from both Siah and Anjira. The 'wheel' motif occurs in a more elaborate form at Anjira, Fig. 17, A9 (Tr. II, 4).

26. A common geometric motif of opposed cross-hatched triangles separated by a chevron (Tr. II, 5).

27. Slightly beaded rim with vertically banded meander pattern between horizontal bands. Cf. Siah-damb, Jhau, *Gedrosia*, Pl. XXV, Siah 1. The motif also occurs in the K.ñí culture (Tr. II, 6).

28. Rim in red ware, cream-slipped, with multiple step motif. *Nal* design No. 21. Cf. Anjira, Fig. 19, 28 (Tr. II, 6).

29. Sherd with diagonally hatched *pipal*-leaf and small fill-motif at the upper border. These elements are typical of *Nal* but the diagonally hatched leaf is unusual. Conventional *pipal*-leaves with central stem occurred in the same level and in Anjira, Tr. III, 2 (Fig. 19, 19) (Tr. II, 3).

30. Rim fragment with geometric pattern incorporating cross-hatched rectangle within a panel below triple bands (Tr. II, 5).

THE POTTERY CHARACTERISTIC OF PERIOD IV

The pottery of period IV is of particular interest since it illustrates the very wide range of different ceramic techniques and artistic styles employed at the same time within a single cultural assemblage. In addition to their stratigraphical association, it is possible to demonstrate the interrelation of these wares on stylistic grounds. Large vertical lip jars, for example, occur with either black colour-coating or a granulated surface, and in one instance, both decorative techniques have been applied to the same vessel. The use of cordons serves to link granulated, colour-coated and bichrome pottery. It has also been possible to show that although Siah and Anjira lie some 16 miles apart, the same elaborate designs executed in identical styles on the finer decorated wares were found on both sites. This points to a common source of manufacture, probably—on grounds of density of population—in the Surab valley, with a purely local distribution.

Another feature which must be stressed is the great variation both in style and artistic competence discernible even in the contents of a single level¹. How far these variations reflect the work of different but contemporary potters or merely represent possessions accumulated over a period of years cannot be deduced on the present evidence. In view however of the importance which decorated pottery assumes in any study of the prehistoric cultures of Kalat this point is one which must continually be borne in mind.

As a group the pottery of period IV shows a distinctive angularity when compared with the vessels of the earlier periods. This angularity is often emphasised by carination and cordons, combined with a width which is slightly disproportionate to the height—an effect sometimes accentuated by the use of elongated animal forms and horizontal bands of decoration. Both in form and design the Surab pottery contains elements which are common to both Nal and Nundara, but the presence, though rarely, of polychrome decoration, lobed bowls and square-shouldered canisters suggests that it should be regarded as a local variant of the Nal culture. It is probable that the Surab sites provide, for the first time, the full ceramic assemblage of a Nal occupation-site as distinct from a cemetery since only the plainer household wares found on the Surab sites remain unrelated to the pottery from the burials at Nal; in fact, the kind of wares which would not have been deemed suitable as gravegoods when more attractive pottery was to hand. The more elaborately decorated colour-coated Anjira-ware might have been used for funerary purposes and it is tempting—but dangerous—to identify

1. Cf. Fig. 16, 4, 8, 15, 18 and Fig. 15, 57, from Siah, Trench II.

it with the dark-slipped cordoned ware reported, but not adequately illustrated, from Nal.

While the decorated pottery contained very few Kulli elements, a link with that culture was provided by the cordoned, colour-coated ware. The interest of this ware is threefold. Firstly, the discovery of a black slipped buff-ware implies a ceramic technique alien to the earlier prehistoric cultures of Baluchistan and probably reflects a vogue current in Iran and further west during the second half of the third millennium B.C. Another possible link with the west is provided by the snake motif, used both in relief and in painted designs which may well have a symbolic significance. Thirdly, the Kulli associations of the cordoned ware suggest that the occupation of Period IV should be assigned to *c.* 2000 B.C. or earlier (see p. 171).

Since the decorated pottery of this period was extremely varied it has been divided into certain recognisable groups for ease of reference. It must however be stressed that these divisions imply no cultural distinction.

THE POLYCHROME AND BICHROME POTTERY OF PERIOD IV

It was clear from the contents of Siah Trench II that the bichrome pottery of phase iii differed stylistically from that of the earlier phases which had been restricted to purely geometric decoration. While the range of early bichrome forms was too limited to allow detailed comparison, the overall impression is one of globular, or gently curving vessels in phases i-ii. In contrast, the pottery of phase iii and Anjira IV is markedly angular, with cordons and carinations used for emphasis. Another distinctive feature of the pottery of this period is its width in proportion to its depth, an effect heightened by the subtle choice of patterns accentuating horizontal movement. This is perhaps best illustrated in the designs incorporating elongated animal forms within a purely secondary but harmonious background. While the elongation of the body recalls Kulli designs, the treatment of the background is entirely different. At their best, the Surab designs present a well-coordinated pattern, whereas little attempt is made to integrate the minor background elements in Kulli-ware. It should also be noted that none of the secondary Kulli elements - the processing goats, conventionalised birds, 'sigma' and comb motifs - occur in the Surab animal style.

The range of Period IV forms (Fig. 17-18) was wide and included a number of Nal types such as fine beakers or deep cups (Nal 4), well-proportioned carinated bowls (Nal 3), smaller bowls with sinuous sides (Nal 20), canisters (Nal 5), and quadrilobate bowls with looped bands from Nal (Nal

14). For the most part rims were tapered and either straight or gently curved; but beaded bowls such as Fig. 18, A15, and some bevelled rims occurred. As at Nal many of the vessels had been pared.

The pottery was wheel-thrown, of very thin to medium thickness (2.5-6cm.), occasionally with minute grits in the well-fired tan-buff paste. A thick cream slip was used predominantly in this period, although some black-on-red ware was found. The cream slip served as ground for designs in black/brown often supplemented by bands or blocks of a fugacious infill of plum red paint, different in tone from the more apricot infill of the earlier bichrome ware. Only a few sherds (Fig. 16, 6, 7, and 9), with the yellow or green infill so typical of mature Nal were found and red was substituted for the green of No. 9 on another sherd with identical design.

This use of plum red on a cream slip occurs both in the Amri-Nal-Nundara group and in the Kulli culture. In Kulli-ware, which is distinguishable from the other group on stylistic grounds and from its coarser fabric, the red infill occurs only as bands. At Amri it is generally used as bands and incorporated in geometric patterns although examples of red infill on an animal pattern were found in ID and II B'; it is only in Nal and Nundara wares that naturalistic and animal patterns are found with blocks of coloured infill.

In general the motifs on the bichrome pottery fall into three groups: zoomorphic, naturalistic and geometric. While the latter may represent the development of the early geometric bichromes of phases i-ii; it should be noted that zoomorphic and naturalistic patterns only begin midway through phase iii in the Siah sequence. The animals most frequently depicted were humped bulls, goats, lean greyhound creatures, felines and fish. A double outlined cross or a rondel was often set between the bulls' horns in a manner similar to the circle or triangle which appear above Kulli bulls (Fig. 19, 8, and in monochrome on 25). There, however, the resemblance ends. Not a single example of the stylised goats so common on Kulli-ware were found. Where goats were represented on the Surab pottery they appeared as individual animals, sometimes full face, and never as a frieze. They are shown in plum with black outline, the eye as a dot usually black-ringed and set in a red-infilled face (Fig. 16, 5). The neck and dewlap of the bulls were often distinctively coloured in alternating bands of black and plum on cream.

These designs fill the area from the rim of the vessel to the carination or curve towards its base and are usually set between single or triple bands. The animals are arranged either metopically, facing right, within a panel formed of 'hourglass' dividers, as on A 6a, or heraldically, affronted (A 6 and Fig. 19, 17) or addorsed (Fig. 16, 3) and sometimes with tails crossed, in a manner reminiscent of the cylinder-seals of Susa Ca-b. A distinctive feature in the heraldic group is the use of finely cross-hatched or banded blocks (Fig. 16, 8, 9) to fill the background between the animal's legs and follow the line of its body (Fig. 19, 3). This constitutes a divergence from the Nal practice of using blocks of coloured infill for a similar purpose¹.

The range of design within the naturalistic group was limited, the most common motif being pinnate leaves (A 10b) springing from a central stem, and set between banded 'hourglass' dividers. The use of this kind of divider seems restricted to the Surab sites, in Nal and Nundara the division being always made by grouped vertical lines, and while the 'hour-glass' appears at Kohtras² it is as an integral part of a geometric slashed pattern and not as a divider. Petalled rosettes were found at both Siah and Anjira (Fig. 16, 13). The white as well as red infill in the petals of Fig. 19, 1, is of interest since the unique bowl with 'horned deity' ascribed to a pre-Harappan period at Kot Diji also bore a similar device with white infill³. Rosettes occurred in the Harappan levels at Amri and Chanhudaro⁴ and on sherds belonging to a mature phase of the culture at Harappa, in one instance in association with a vase bearing wavy comb-incising⁵.

The geometric group contained patterns common to the Amri-Nal-Nundara complex. For the most part the plum infill was confined to one or two horizontal bands, with the rest of the design in black. Common motifs were bands of black 'ladder' pattern round the rim (Fig. 16, 14); spicate hatching (Fig. 19, 7), and opposed triangles, plain or cross-hatched separated by plum bands (A 9d). Colour was occasionally used in the chequerboard (Fig. 19, 5) also common to Amri and Nundara, in multiple outlined patterns of Nal-Nundara type (Fig. 19, 9; Fig. 16, 10-11), in the wavy sigma (A 8), another Nundara pattern⁶, and in the looped designs on

1. *Nal*, Pl. XXI, 14.

2. *Sind*, Pl. XXIX, 31, 35.

3. F.A. Khan, Before Mohenjodaro: New Light on the Beginning of the Indus Civilization, from Recent Excavations at Kot Diji, *Illustrated London News* (24.5.58), 867, Fig. 3.

4. Mackay, 'Chanhudaro Excavations, 1935-36', *American Oriental Ser.*, 20 (1943), Pls. XXXII, 1, 4; XXXIII, 1, 11, 16.

5. R.E.M. Wheeler, Harappa 1946: the Defences and Cemetery R37. *Anc. India* 3 (1947), Fig. 10, 34, 39; Fig. 14, IXg.

6. *Gedrosia*, Pl. XXV, Nun. 2 and 12.

Siah, phase iii, bowls (Fig. 15, 52, 56 and 59) which appear closer to Nundara than Nal.

MONOCHROME POTTERY

As in the case of the earlier wares, the distinction between some of the bichrome and monochrome pottery may be largely fortuitous since many of the motifs recur.

Among geometric patterns not included in the bichrome repertory were double-axes with either plain or fringed edge. While the former is common on Kulli and Quetta pottery, the vertical fringe may reflect Iranian influence. The wheel motif on A9 and Fig. 15, 68 appears in a slightly different form at Siah (Fig. 16, 25). Another motif common to both sites was the irregular circlet (Fig. 16, 23 and A 10d) which is probably based on the double diamond of Nal.

Occasionally a combination of decorative styles was used, as in the case of the large Anjira-ware jar with curvilinear design on a reserved band (Fig. 15, 54)—a design known from both Kulli and Nal (see above, p. 153). Other examples of combined styles were the Anjira-ware dishes (Fig. 21, 22, 22b) with large black dots inside and a buff-ware bowl similar to Anjira form 11, but gently lobed, with spots above quadruple bands ending at a cordon (Pl. IX, a, 1, Aj. I, 6).

Two classes of monochrome design call for comment; a cordoned ware with zoomorphic patterns set usually, but not always, above a zone of small spots (Fig. 19, 10, 12, 15), and a style in which animals were depicted in outline against a plain background (Fig. 16, 18). The decorated cordoned ware was found in the upper levels only of the Surab sites and appears to be uncommon outside the area—a single example only is known from Nindodamb in the Ornach valley. The ware, of medium thickness, wheel-made and reddish-grey, contained grey flaky grits often visible through the thick cream slip. The only form determinable was a beaker or deep cup. The cordons were simple horizontal ribs of triangular section (unlike the cordons on Anjira-ware). Single and double cordon were more common than triple, and were generally marked by black bands. A zone of small spots was set below the cordon with attenuated feline or greyhound forms above and in one case, an animal pulling down a stag¹. Bulls², goats and fish, the latter set between double cordons (Fig. 16, 17 and Fig. 19, 11, 12) were also

1. In Damb Sadaat II, *Quetta*, Design 142.

2. The sherd, from Siah II, 2, is in Pakistan and not available for illustration.

found. All were drawn in outline facing right, and were either blocked in black or filled with fine cross-hatching. Hatched background blocks followed the outline of the animals and were used as dividers.

The carinated and finely cordoned bowl (Fig. 19, 13) illustrated the same style without the spotted zone. A similar bowl in the Field collection from Siah¹ shows a bird of prey with a cobra at its feet.

Zones of spots are so far without parallel in Baluchistan. Spotted infill is probably representational in the case of the felines (Fig. 16, 15 and Fig. 17, A6). No spotted animals are known from Nal or Nundara but a Kulli-sheerd occurred in a late level at Mohenjodaro². Snow leopards feature in the designs of Giyan IV, Sialk and Hissar and in the period which at Kara Tepe was related to Namazga III³; at Mundigak they appeared on the 'brandy balloons' of Period IV, 1⁴.

The other class of zoomorphic decoration - animals outlined against a plain background - also came from the upper levels of both the Surab sites. This type of design is related stylistically to the animals with plum or spotted infill (cf. Fig. 16, 18 and Fig. 19, 3) but is distinct from either in the absence of background detail. The motifs are boldly drawn in profile and the fluid style and delineation of the haunch immediately suggest comparison with Nal⁵. The animals appear to be lions with upraised tufted tails. Decoration of this kind seemed to be restricted to cylindrical wall bowls where forms could be identified and the ware, which contained black grits, as at Nal, was thicker than that of the zoomorphic bichrome group.

A sub-group, also depicted without background, comprised banded animals with black heads, fish, snakes and a bird. Fig. 19, 16, is strikingly akin in style to the animals depicted on the 'brandy balloon' pottery in Mundigak IV, 1⁶. A further link with the north is provided by the bird (Fig. 19, 26) and tail feathers (No. 21) which recall similar designs from Periano-Ghundai⁷. The fish (Fig. 19, 27) occur at Nal, but the cobras (Fig. 16, 19, 20 and Fig. 17, A10) are unparalleled in Baluchistan.

1. *Field*, Fig. 25, 7, 8.

2. *Ibid.*, Fig. 25, 10.

3. *Anc. India*, 5, Pl. VI, 70.

4. V.M. Masson, *Djeitun and Kara Tepe*, *Sov. Ark.*, 1 & 4 (1957), 143-160.

5. *Mundigak*, II, Fig. 63, 160-162.

6. *Mundigak*, II, Figs. 62-63.

7. *M.A.S.I.*, 37, Pl. VII, P.C. 2. (Rana Ghundai IIIc).

In a category apart was a ware resembling Mian Chundai Dark-Rim Fine ware¹ in fabric, tone and style of decoration. It occurred only rarely in Anjira IV and Siah II, phase iii, but was noted as plentiful during surveys at Kapoto, 17 m. SE. of Kalat town². This ware was medium-thick, fired either buff or red. Fig. 15, 51, a large straight-side bowl, was decorated with broad bands of light tan paint, and the same decoration was noted on A 14a, a bowl with incurved neck. A globular vessel in red ware, with greyish slip, bore dark grey bands, 2.5 cm. in width and meeting at an angle, and a short-necked jar (Fig. 15, 48) was decorated with a bold curvilinear pattern in dark brown.

FIG. 17. TYPES OF DECORATED AND PLAIN POTTERY FROM ANJIRA IV.

NOTE: *Unless otherwise stated, the pottery described is cream-slipped buff ware.*

Type A1. A variant of Nal Form 4, a small cup, diam. 11.4 cm., with tapering, everted sides. A triple chevron above horizontal bands occupies the upper zone. Cf. Quetta-ware footed cups of similar form and decoration (*Quetta*, Fig. 49) (Surface).

Type A2. Rimless tronco-conic bowl, diam. 28.8 cm., in relatively thick ware. The form is not recorded at Nal. The design shows part of a humped bull infilled in dark brown and set within a coarsely cross-hatched background (Surface).

Type A3. An elongated biconical flask, rim diam. 9.2 cm., in red ware. The bold multiple angle pattern in black is unusual and is not found in Nal; in Quetta-ware the design would not have covered the whole surface (Tr. I, 2). Variant A 3a, diam. 10.8 cm., is more globular. The ladder pattern round the rim is common in this period. Vessels of the same type occurred in Sadaat-ware (*Quetta*, Fig. 66, type XI, v). (Surface).

Type A4. Similar to Nal 24, a small vase with narrow everted rim, diam. 9 cm. Geometric design in brown, with traces of double lentoids within a rectangular panel between vertical lines (Tr. I, 1).

Type A5. Small S-curved wall bowl, diam. 15.6 cm., more flared than Nal 20. Fine hard red ware with light buff slip. Geometric design in brown with bands of plum red infill (Surface).

Type A6. Thin-walled bowl, diam. 26 cm., slightly more everted than Nal 3. One of a pair of opposed, spotted animals with rayed circlet below the bands at the rim. Cf. Siah, Fig. 16, 15 (Tr. I, 5). Similar circlets occur in Mundigak IV, 1 (*vide* Fig. 86, 341). Variant A 6a, diam. 22.4 cm., has thicker walls and a more tapered rim. The hindquarters of an animal, probably a bull, are infilled in plum red; banded hourglass divider with vertical fringe recalls Pandi Wahi (Surface).

Type A7. Nal 5. Rim of canister, much worn. The neck, diam. 4.4 cm., has sunk slightly increasing the angle of the shoulder and causing the sides to cave inwards. Only the banded

1. *Quetta*, Fig. 57.

2. Sherds in the University of London Institute of Archaeology and *Field*, Fig. 27, 4.

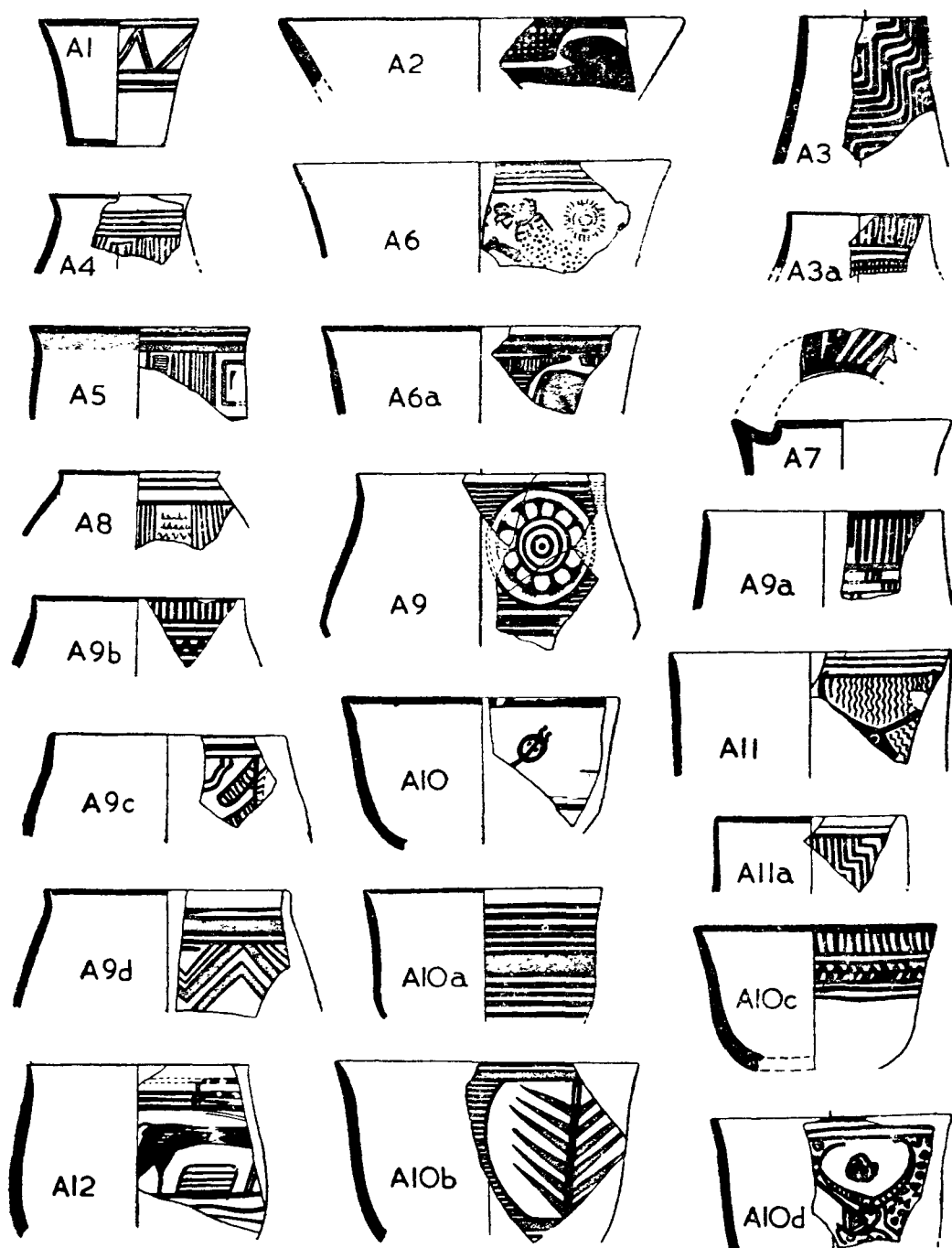


Fig. 17. Forms characteristic of Anjira IV ($\frac{1}{2}$)

pattern on the shoulder could be traced. Cf. banded canister from Rohel-jo-kund (*Anc. India* 5, Fig. 3, XIII). (Surface).

Type A8. Small thin-walled globular jar with slightly beaded, flaring rim, diam. 8.8 cm.

The wavy lines in plum red between multiple vertical dividers occurred also at Siah, Fig. 16, 22, and at Nundara (*Gedrosia*, Pl. XXV, Nun. 12). (Surface).

Type A9. Squat biconical carinated bowl with tapering rim, diam. 13.2 cm. One of the three sherds found had a small hole pierced below the rim. A variant of the 'wheel' motif was used with fish at Siah, Fig. 16, 25; otherwise, there are no analogies for this motif in Pakistan (Tr. III, 1). Variant A 9a, is less curved. The form is not recorded from Nal. Traces of a deep panel of vertical lines at the rim meet a plum red band above a zone of geometric pattern (Tr. III, 1). Variant A 9b is more globular, with short tapering neck. This and the other variants have an average rim diameter ranging from 11 - 12.8 cm. A band of vertical lines at the neck above an edged band of bisected chevrons (Tr. III, 1). A 9c is a globular bowl with in-sloping neck and untapered rim. Nal motif suspended from a band around the neck with banded plant form springing from a central stem (Surface). Cf. *Mundigak*, II, Fig. 86, 344, of Period IV, 1. A 9d, bowl with everted neck. Overfired reddish-grey ware, with red and black decoration and red slip inside (Tr. I, 3).

Type A10. Nal 20. (Pl. VA, 15) Bowl, diam. 19.6 cm., in fine pinkish-red ware with dense cream slip externally. Brown band inside rim, 1.5 cm. The tail of the cobra continues as a wavy line on two other sherds of the same pot (Surface). A 10a has a sharply tapered rim and sinuous thin walls. Same ware as A10. Rather loosely painted multiple horizontal bands cover the body; a band of plum red introduced midway down the pot. Thin black band inside rim (Tr. III, 2). A 10b resembles Nal 20 and 27—the absence of the base prevents closer identification. A bold design of pinnate leaves springing from a central stem, banded in plum and set between horizontally banded hourglass dividers (Surface). A 10c, a thick, flat-based bowl, with rounded edge (Surface). A 10d shows little variation in the thickness of its walls; the rim is blunt. A double outlined motif appears between the horns of a beast with spots running riot in the background. Cf. Fig. 16, 23 (Surface).

Type A11. Straight-sided bowl with tapering rim, diam. 20 cm. (Surface). A 11a, a thin straight-sided cup or bowl, with band inside the rim, dia. 9.8 cm., and multiple angle pattern below two bands at neck (Tr. I, 6).

Type A12. Biconical bowl with finely tapered rim, diam. 16 cm. The body of an elongated animal infilled with brown; crude horizontally banded block between the legs (Aj. III, 1).

Fig. 18

Type A13. Short-necked biconical bowl, diam. 10 cm., more globular than A 9d. Ladder pattern at neck with brown band inside rim. A 13a, less globular, with slightly flared rim, diam. 10.4 cm. Multiple horizontal black band, from neck to middle of the bowl (Tr. III, 4).

Type A14. Globular bowl with slightly incurved neck, rim diam. 21 cm., the walls thinning towards the base. Hard red ware, self-slipped (Tr. I, 5). Variant A 14a, bowl with short, incurved neck, diam. 22.8 cm., and angular shoulder. The ware, pared externally, resembles Mian Ghundai Dark-Rim Fine ware; the form resembles *Quetta*, Fig. 67, Type XIX.

Type A15. Bead-rim jar or bowl, diam. 14.4 cm. Few bead-rims were noted. (Aj. I, 1).

Type A16. Miniature pot with thin angular rim, diam. 14 cm., light tan slip and deep black band extending from rim to shoulder (Surface). A 16a has a thick flaring rim, diam.

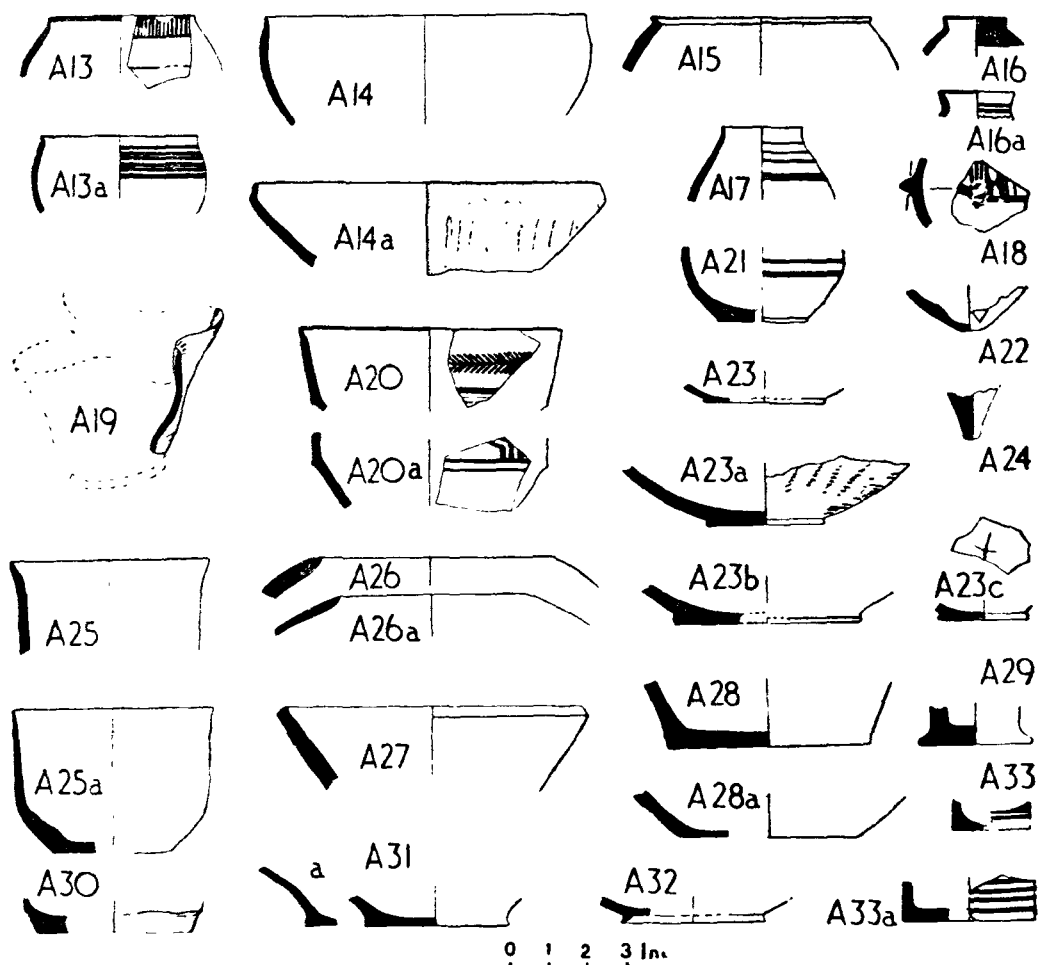


Fig. 18. Forms characteristic of Anjira IV

5 cm., at least two black bands externally and a narrow band on the inner edge of the rim (Tr. I, 4).

Type A17. Small ovoid vase with thin flaring rim, diam. 5 cm. Dense red-tan ware with multiple black bands Cf. the *lota*-shaped vases characteristic of the pre-rampart material at Harappa (*Anc. India* 3, Fig. 9, 33). (In Pakistan)

Type A18. Part of a globular vessel with pointed lug vertically pierced. Red ware, with traces of dark tan-red slip and black double-axe design (Tr. III, 1).

Type A19. Quadrilobate bowl, deeper than Siah, Fig. 15, 49a, and Nal 14. (Tr. I, 1).

Type A20. Part of a cordoned bowl, diam. 19.6 cm., perhaps a variant of Nal 2. The marked striations inside occur also on Variant A 20a. The design occurred at Siah (Tr. III, 2). Fronds and branches appear on the 'brandy balloons' of Mundigak IV, 1 (Fig. 65, 185) and carinated bowls (Fig. 69, 209). A 20a forms part of a bowl with less everted sides above the cordon (Tr. I, 6). Cf. Roheljokund XI, *Anc. India*, 5, Fig. 3.

Type A21. Base of a globular vase, diam. 6 cm. Red ware with small black grits and tan-cream slip. Traces of double black bands (Tr. III, 2).

Type A22. Bluntly pointed base, pared and flattened. Part of a potter's mark incised in the side near the base (Tr. I, 4).

Type A23. Flat beaded base, diam. 8 cm. (Tr. I, 3). A 23a, Well-marked beaded base of bowl with pared walls (Tr. II, 1). A 23b, flat-base with angular beading (Tr. I, 4). A 23c, slightly concave beaded base with potter's mark in red ware (Tr. III, 2).

Type A24. Pointed base, grog-backed red ware, cream-slipped, and pared (Tr. III, 5).

Type A25. Straight-sided bowl or cup with slightly flared and tapering rim, diam. 13 cm. Red ware, self-slipped. Cf. *Quetta*, Fig. 67, Type XIII, b, and Roheljokund VIII, *Anc. India* 5, Fig. 3. (Tr. I, 3). A 25a, thinly tapering straight-sided bowl, thickening considerably as the walls curve in towards the flat base (Surface).

Type A26. Flattened rim of neckless ovoid jar, diam. 14.5 cm., hard red ware, self-slipped externally (Tr. I, 1). A 26a, thin-walled jar with tapering rim, diam. 12 cm. (Tr. I, 3). Cf. Roheljokund XIV, *Anc. India* 5, Fig. 3.

Type A27. Large basin with nail-head rim, diam. 20 cm., hard red ware A similar form occurs with thinner walls (Tr. I, 3).

Type A28. Plain flat base, diam. 12.7 cm., of thick-walled jar in coarse red ware, much encrusted (Tr. I, 1). A 28a, thin flat base of a globular jar with thick sides, diam. 11.3 cm. (Tr. I, 1).

Type A29. Unusual, heavy flat base, diam. 7.8 cm. of cylindrical beaker or jar. Thick red ware, much encrusted (Tr. I, 2).

Type A30. Thick flat base, diam. 9.8 cm., sharply pared below thin walls (Tr. I, 6).

Type A31. Flat disc base, diam. 11.2 cm., in encrusted red ware (Tr. I, 1). A 31a has more concave sides (Tr. I, 3).

Type A32. Small ring-base, diam. 9.2 cm. (Tr. I, ?).

Type A33. Flat base of small cylindrical canister, diam. 5 cm. Brick red ware with smooth surface. Horizontal black bands (Tr. I, 2). A 33a, a larger form, diam. 2.8 cm. (Aj. I, 1).

FIG. 19. ANJIRA, PERIOD IV: BICHROME AND MONOCHROME POTTERY

NOTE: *All sherds are in buff ware, with cream slip unless otherwise stated.*

1. Part of a small globular pot with beaded rim. The petalled motif is set on a white infilled ground as distinct from the cream slip beneath the hatched hourglass divider. The petals of the floret are filled with plum red, the central circle with white. The motif occurred at Siah but without white infill (Surface).

2. Part of a beaker, Type A10b, with rim diam. 16 cm. Traces of plum red infill in the horizontal band above the central design zone which is divided by an hourglass, hatched horizontally below a vertical fringe. Cf. Pandi Wahi. A similar design with plain hatched hourglass occurred in Aj. III (1) (Surface).



Fig. 19. Decorated pottery of Anjira IV ($\frac{1}{2}$)

3. (Pl. V, A, 10) Part of a straight-sided bowl, Type A, 11 with tapering rim. The elongated animal with upraised tail is painted with care, the body filled in with russet red. The fluidity and balance of the design is heightened by the use of cross-hatched background filling which follows the general outlines of the animal's body (Tr. III, 2).

4. Part of a thin, straight-sided bowl, showing the forelegs and dewlap of a bull, the body infilled with plum red. Vertically hatched background motifs are placed beneath the animal's body. Colour fugacious (Tr. III, 1).

5. Bowl with traces of chequerboard design with alternate red infill. Cf. Siah, Fig. 16, (Tr. III, 1).

6. Sherd showing the head of an animal, with narrow hatched band around the neck. The body is spotted and the protruding tongue infilled with red. Felines depicted in the same style with hatched neckbands and occasionally protruding tongues are known from Nundara, though none are spotted (*Gedrosia*, Pls. XXV, Nun. iv. 12; XXVI, 20, 21). (Tr. I, 5).

7. Part of a jar with flaring rim, resembling Types 18 and 19b. The band of spicate hatching is set between two black-edged bands of red infill. Open centre spicate hatching was used on a similar monochrome sherd from Tr. III, 2 (Tr. III, 5).

8. Rim of a biconical bowl between Types A9b and A9c. A broad band between narrower lines edges the rim above a horned bull infilled with red. A probably cruciform motif is set between the horns. Cf. No. 25 (Tr. III, 4).

9. (Pl. V, A, 8) Part of a slightly concave bowl similar in form to Siah, Fig. 15, 58, curving sharply inwards towards the base. The geometric Nal design in black with red infill occurs also at Badrang-damb, Rakhshan (*Gedrosia*, Pl. II, B.R. 14).

10. Sherd with triangular sectioned cordon separating a zone of spots below from an animal amidst hatched blocks above (Tr. III, 4).

11. (Pl. V, A, 14) Cordoned sherd with horizontal fish and finely cross-hatched pattern separated by a band along the cordon (Surface).

12. Vessels with double cordons and fish set on the plain ground between the lower register of spots and upper panel with fine cross-hatching and possibly an animal pattern. The treatment of the fish and X-ray style, with vertical hatching and a wavy line is unparalleled in either Nal or Nundara; a sherd from Mehi comes closest to the general style though only in this one respect. Cf. *Gedrosia*, Pl. XXIX, Mehi, iii. 4, 6. The design occurred also at Siah, Fig. 16, 17a (Surface).

13. (Pl. V, A, 13) Part of a cordoned, carinated bowl with hole pierced through the side, below the design zone which shows the head of a long-necked animal and hind leg of another. Both animals are elongated and the cross-hatched background follows the general outline of the main design. Cf. Ander damb (Siah-damb), *Field*, Fig. 25, 10 (Tr. III, 4).

14. (Pl. V, A, 11) Sherd similar in style to No. 13, showing the flank of an elongated animal, with background cross-hatching following the main design (Tr. III, 5).

15. Bluntly cordoned sherd, the ridge marked by a band and separating a zone of spots from a cross-hatched animal design above (Tr. I, 111).

16. Part of a globular pot with horned animal design. The treatment of the head, and the hatching of the body are of interest. Both form and decoration closely resemble the "brandy balloon" vessels from Mundigak IV, (*Casal*, Pl. III, F). (Surface).

17. (Pl. V, A, 9) One of a pair of affronted, banded, animals, paws touching, with cross-hatched background blocks. (Tr. III, 4).
18. Rim showing part of a divided *pipal*-leaf with concave outline. The design occurred at Siah (Tr. III, 2).
19. Typical Nal design of repeated, divided *pipal*-leaves, on a straight-walled bowl in red ware with thick cream slip. The small fish is an unusual addition Cf. Chhutijokund, Gaj valley, *Anc. India*, 5, Fig. 5, XVIII (Tr. III, 2).
20. Sherd with double axe motif in brown. This motif is found in Quetta-ware of Damb Sadaat II (*Quetta*, design 142). Cf. Siah, Fig. 15, 68 (Tr. III, 1).
21. Thin tapering rim in red ware, hard-fired and smooth; no slip visible. The design is in black and may represent the tail of a bird, as at Periano-Ghundai, see below, No. 26 (Tr. III, 1).
22. Part of an open bowl in thin buff ware, with the head of an animal in brown (Tr. III, 1).
23. Sherd with repeated angle pattern in Nal style (Tr. I, 1).
24. Rim sherd with double outlined motif; a variation of *Nal*, Pl. XVII, 19 (Surface).
25. Rim of beaker, Type A11a, in smooth red ware with light tan slip. Traces of a horned animal with double-outlined cross above the head. The ware is not clearly identifiable as a Period IV buff ware. (Surface).
26. Sharply carinated bowl with bird motif reminiscent of Rana Ghundai III c pottery at Periano-Ghundai, though the form is more angular. Cf. *M.A.S.I.*, 37, Pl. VII, P.G. 2 (Tr. I, 3).
27. Globular bowl in red ware, cream-slipped. The sides have been vertically pared above the triple bands. The double row of fish are paralleled at *Nal*. Pl. XIX, 4 (Tr. I, 5).
28. Sherd with repeated angle elements. Cf. *Nal*, Pl. XVII, 20. The design occurs also at Siah. Fig. 16, 28 (Tr. I, 6).

ANJIRA-WARE

The discovery of this very distinctive black, or less commonly, red colour-coated ware is of considerable interest both technically and from its association with Kulli-ware, the one Baluchi culture of this period with strong external contacts. A ware identical in appearance is recorded from both the type-site¹ and from the Kulli levels of Shahi Tump, where it was found with an incised pottery hut-urn of the debased type known in north-eastern Iran in a late Akkadian context² (c. 2000 B.C.). At Nal a dark cordoned ware is mentioned but not illustrated, but the probability of its being identifiable as Anjira-ware seems strong in view of the fact that Nal

1. *Gedrosia*, Pl. XXV, Kul. I. viii, 8; Pl. XI, Sh. T. iii, 8-9.

2. R.E.M. Wheeler, 'Harappa 1946' the Detences and Cemetery R. 37', *Ancient India*, 3 (1947) 80.

pottery and Anjira-ware have been found on the surface of Badrang-damb, Pak, and Thale Damb in southern Baluchistan¹. Kulli-ware was also present on the latter site.

McCown noted that a ware with wavy ridges in relief was present at Niain Buthi with Nal pottery, but seemed to be more common in the Kulli levels on the site. While material relating to the two cultures appears to have been mixed near the surface, McCown suggests that the Nal occupation was probably the earlier, a hypothesis which should be tested on other sites. Anjira-ware thus confirms the partial contemporaneity of the Kulli and Nal cultures.

On the Surab sites Anjira-ware appeared at the end of Period III (Siah II, phase iii) but only became dominant in period IV. While its association with the other wares of that period is confirmed stratigraphically, it is of interest to note that the distinctive Anjira slip serves to relate this ware to the vessels with granulated surface and its combination on a jar with reserved panel (Fig. 15, 54) provides a further link between the Kulli and Nal cultures.

Technically, Anjira-ware is of importance since the use of a black colour-coating on a buff ware suggests the introduction of a style alien to the earlier prehistoric wares of Kalat. The fabric is a gritty, buff to greenish ware. The surface layer is hard when well fired and may be black or red, depending on the state of oxidation of the iron present; the reduced (i.e. black) form, appears to be more stable in the surface layer than in the body. In the counted sample (380 pieces in Anjira, Trench III, 1) the proportion of red to black was about 1.4. Elsewhere the proportion was never higher and often much lower, the red being at times completely absent. The colour-coating flakes off easily and it may have been to overcome this failing and to key the slip that the fabric was often finely scored in a herringbone pattern (Pl. IX, a, 5). The scoring of the surface was also noted beneath the thick slip used on Periano Wet ware (Pl. IX, a, 3).

The best examples of Anjira ware are well thrown and firing at a high temperature - above 1100 C - has produced an exceedingly hard ware; in fact, it is difficult to find comparable ceramics in Europe before the rise of stoneware². When overfired, the surface is slightly fused to a black or green-speckled 'glaze' resembling stoneware in texture.

1. *Gedrosia*, Pls. II, B.R. 18, XX, Pak. 1, Thal. 2, 6.

2. I am indebted to Miss Mavis Bimson, of the British Museum Laboratory, for her comments on Anjira-ware which are in part included in the description given above.

The ware varies from medium thick to distinctly thin, according to the shape of the vessel. The wide variety of forms classified below (Fig. 20-21) ranged from large jars (30% of the sample) to bell-shaped and sinuous sided bowls, a collared flask and some miniature pots.

Decoration is virtually confined to cordons and comb incising. The cordons were applied to the outer walls of the vessels and occurred on 28.4% of the counted sample. They were either single straight or wavy ridges, usually of rounded D-section, made by luting a thin coil of clay to the surface and smoothing it down with the fingers. Double or triple cordons both straight or wavy, are also found together or in combinations of alternate straight and wavy bands. Occasionally the wavy cordons were transformed into snakes, some with small diamond-shaped heads (Pl. VIII) others resembling cobras, with expanded hood and forked tongue clearly marked. These occur either singly, in pairs (Fig. 20, 12) or even as a triple row around the bowl (Pl. VIII, 4, 7) usually of bell or sinuous form. More rarely, and only at Anjira, relief decoration took the form of twisted sheeps' horns, with or without a full face head¹.

Comb incising in straight or wavy bands was generally excuted with a five-toothed implement which cut into the body of the ware, and in some cases (Fig. 21, 13*d*) tended to drag the paste. Such incising was used either alone or in codnjunction with the raise cordons, and appears to be restricted to S-shaped bowls. It differed from the Reserve Slip ware in the early levels of Mohenjo-daro and at Periano Ghundai in that the colour coating was applied after the combing. In Periano Reserve Slip ware the comb-incising cuts through the slip to expose the underlaying fabric.

Superficially, the combination of incised decoration on bell-shaped bowls with a black surface suggests comparison with Jhangar pottery. It must, however, be stressed that Anjira-ware is essentially a wheel-thrown buff ware colour-coated, whereas the Jhangar vessels at Chanhudaro, raised on a tournette, were of a grey to almost black paste, with black coating. Another difference lies in the decoration; Jhangar patterns include incised chevrons, triangles, etc., while comb-incising, either straight or wavy, is the rule on Anjira-ware.

Fig. 20

The following is a classification of Anjira-ware forms:—

Type 1. A large hole-mouth storage-jar with beaded rim, diam. 21.6 cm. Heavy vessels

1. No examples are available in England for illustration.

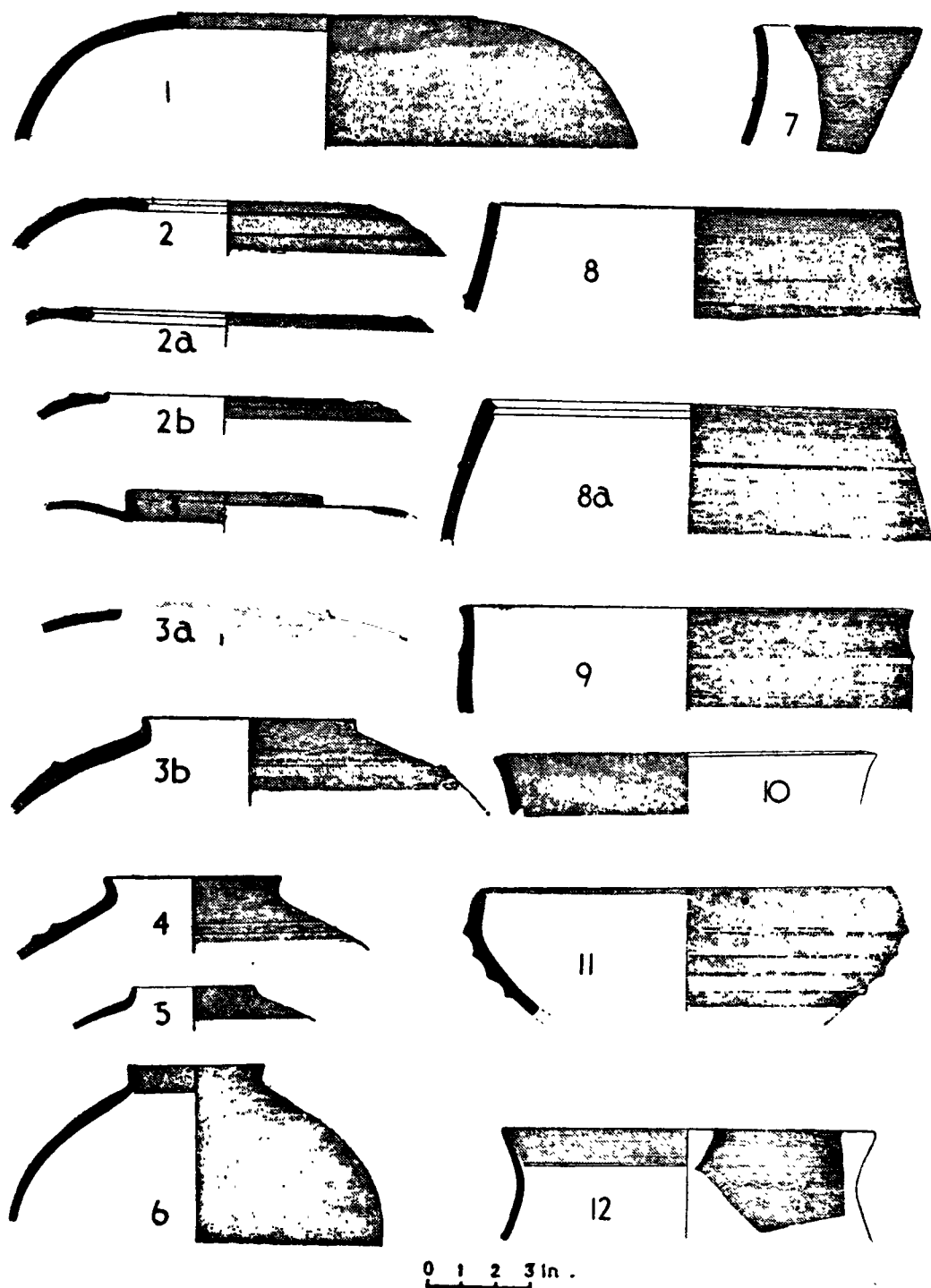


Fig. 20. Anjira-ware: forms

of this type are usually grog-backed, with slip or colour-coating extending over the rim to form a band around the neck.

Type 2. A hole-mouth jar. A large pyriform vessel with the shoulder turning in steadily to a horizontal or slightly depressed simple rounded lip. In extreme forms the mouth approaches the shape of the 'unspillable ink-well'. The shoulder is frequently decorated with straight, horizontal or wavy cordons, single or multiple. Rarely, the shoulder is more angular, each change of direction being marked by a cordon. Variant *2a*, a wide-mouth jar, with thickened rim and more tapered edge. *2b*, a hole-mouth jar with slightly beaded rim on a level with the first cordon. Hole-mouth jars occurred to the extent of 9.2% in the counted sample at Anjira. The width of mouth ranged from 6-12 cm.

There are intermediate forms between Types 1 and 2 with simple lip sloping in 45-60 degrees, but they are rare, 0.8%.

Type 3. A vertical lip jar rim, diam. 14.2 cm. A large pyriform jar with its shoulder curving in to near horizontal, then turning sharply up into a short, cylindrical neck ending in a simple lip. The shoulder is rarely cordoned (4.7%). The angle between shoulder and neck is usually sharp, but occasionally curved through. One example had a thick neck and square-cut lip. Variant *3a* has a short, thick neck; in *3b*, the neck is more sharply everted and the shoulder marked by a cordon.

Type 4. A medium-sized jar with short neck and out-turned rim, diam. 12.8 cm. The shoulder is usually marked by cordons. Variants with more sharply everted rims occurred.

Type 5. A globular jar of medium size with inward sloping neck and tapered rim, diam. 8.8 cm.

Type 6. A narrow-necked jar with slightly out-turned rim, diam. 9.6 cm, and squat, globular body.

Type 7. A large storage-jar with concave walls and flattened rim, externally beaked. A wavy cordon, of more rounded section than is usual, is applied well below the rim.

Type 8. A large square-lip storage jar with inward sloping walls. Variant *8a*, a more globular jar with slight grooving inside the rim. Straight or wavy cordons occur on this type and its variant. Rim diam. c 30 cm.

Type 9. A large, straight-sided jar, slightly thinned at the neck but expanding externally at the flattened rim, diam. 32.8 cm. Straight cordoned.

Type 10. Square-lip bowl—the commonest shape (27.4%). This is a simple tronco-conic vessel, again of large size, and deep in comparison. It has the same squared lip as Types 8 and 9, but its walls slope outwards from the base at about 30 degrees. It is often hard to distinguish between these types in small rim sherds. The edge of the rim, diam. 28 cm, is sometimes slightly reeded. These bowls are slipped or colour-coated inside. The absence of slip on the outside may be due to the ease with which the coating flakes off the heavier vessels. Cordon decoration was slightly less common on this type, about $\frac{1}{2}$ of the sherds, and limited to a single horizontal cordon.

Type 11. A large basin with incurved rim, diam. 32 cm, tapering to a point. This type is usually cordoned on the shoulder and at intervals below.

Type 12. A bowl with everted, tapering rim, diam. 28 cm, and curving body. The curving

profile is more pronounced than Type 13. The bowls are usually slipped externally with the colour extending over the neck to form a band. They are decorated with both straight and wavy cordons, and in this case, with double cordons, broken into shorter strips to represent cobras with expanded hoods and forked tongues following their own or the tails of another pair of snakes.

Fig. 21

Type 13. A deep S-curved wall bowl which could equally well be called a jar, having a flattened S-section wall and a rim diam. of 20-32 cm. The distinction between the three main sub-types is not easily drawn. These variants include a heavy thick lip bowl, usually cordoned (1.8%). The medium type is finer and is the most highly decorated Anjira-ware form. Of the 70 found, 19 had cordons (plain, wavy or both, single or double), 6 were ribbed and 5 had wavy comb markings. The remaining 40 were plain (18.4%). The same form occurred in very thin-walled miniature vessels, all undecorated (5.5%). Variants 13*b-e*, all shallow S-curved bowls, vary only slightly in the thickness of the rim. 13*b* illustrates the use of interrupted wavy cordons probably representing snakes, as in Type 12, set above multiple grooving. 13*c*, a simple bowl with multiple grooving. 13*d* has been pared externally to reduce the thickness of the lower part of the bowl which thus appears more angular in outline. A five-toothed instrument has been used to produce wavy comb-marking. 13*e* combines combing and grooving.

Type 14. Similar to Type 13 except that the walls are straight or slightly incurved. This type and its variants are usually cordoned, either singly or with triple bands and a cordon marking the curve of the walls towards the base, as in 14*b*. Rims are usually tapered but can be squared.

Type 15. A flask or cylindrical jug with vertically pierced countersunk handle. The only example found was decorated with both straight and wavy cordons.

Type 16. A straight-walled bowl, similar to the square-lip bowl, with the last 3-5 cm. angled vertically from the body to a simple lip. Half of the examples had a cordon on the angle (6.1%). Variant 16*a* has been pared for extra thinness and the slip carried over inside the rim to form a deep border.

Type 17. A shallow bowl or dish with height and radius approximately equal. The lower part is widely tronco-conic but the wall then curves gently, or sometimes quite sharply, inwards to a simple lip. In the case of sharply curved shoulders, there is usually a slight outward curve again, the lip still sloping in from vertical but giving a distinctly concave shoulder. These are never cordoned (7.4%). They appear to have been flat-based. The small dish, No. 17 is slipped inside. Variant 17*a* externally.

Type 18. A tronco-conic bowl. A vessel similar to the square-lip bowl but usually with thinner walls, sloping out slightly more widely and ending in a simple tapered lip, diam. 22 cm. Altogether a finer and smaller vessel. Rarely cordoned (1 of 12). (3.2%).

Type 19. Curved wall bowl. A small, deep vessel with smooth convex wall and tapered rim, diam. 17.4 cm. Variant 19*a* has a squared rim with slight external beading and straight cordon at the girth.

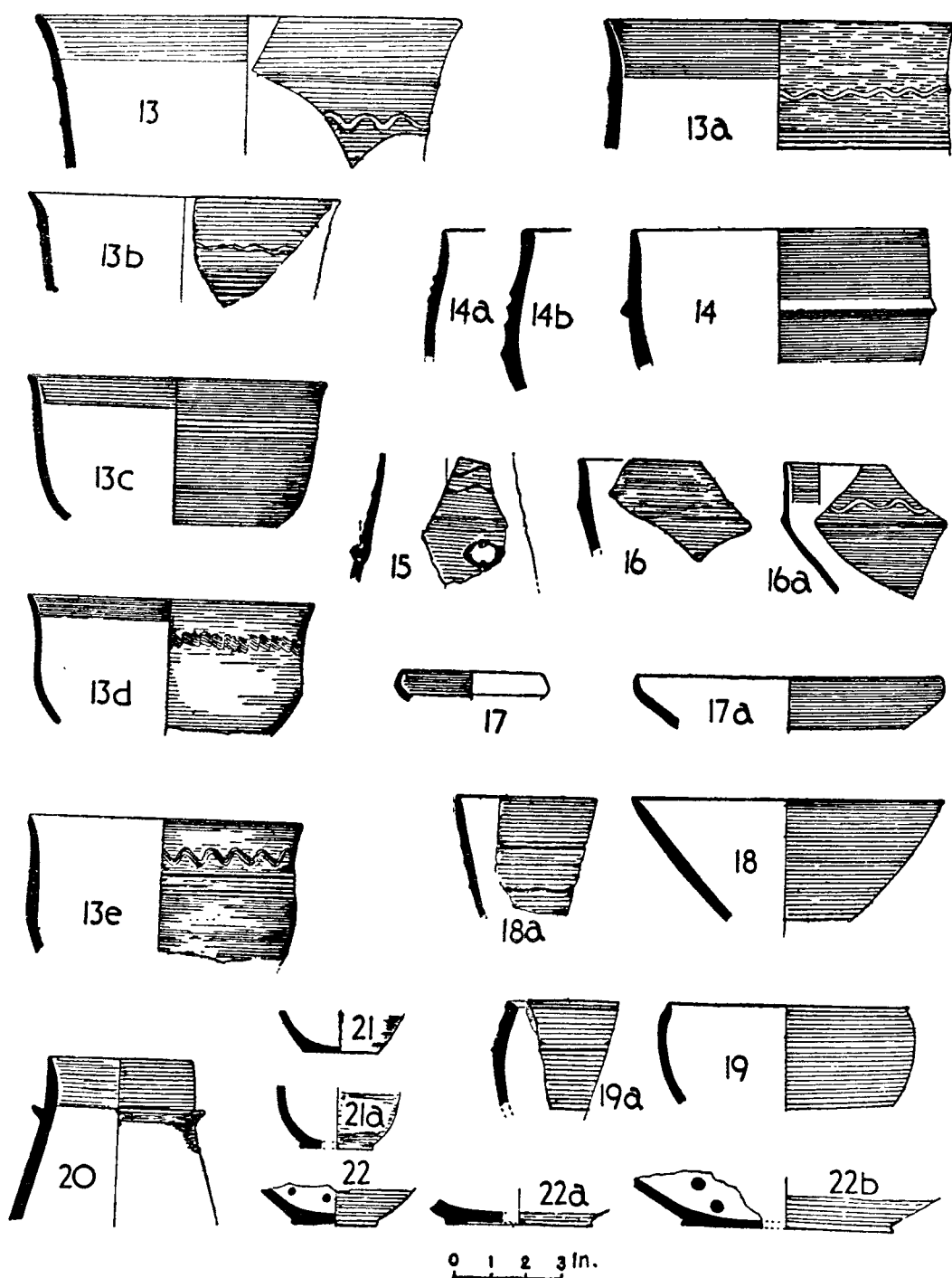


Fig. 21. Anjira-ware: Forms

Type 20. A collared flask. Only one example of this type was found. It has a fairly narrow neck, diam. 10 cm, sloping slightly inwards, then turning vertically to a simple lip. At the base of the cylindrical neck and about 2.5 cm. below the lip, is a wide flange sloping at about 45 degrees up and outwards, probably to support a lid. The thick buff ware, with black

grits, is coated with a black slip on the neck, but the surface is much worn below the collar and no traces of slip remain on the body of the flask. Cf. *Mundigak*, II, Fig. 55, 75, Period III.

Type 21. A cup or small jar with flat base. Variant 21a, has a flat, beaded base.

Type 22. Bases. No complete vessels were found, but fragmentary bases fall into the following groups: flat, as in Type 21; flat beaded, 21a; a simulated beading with slightly concave base, Type 22; a shallow foot-ring, square lip to support some vessel, probably one of the bowl types, was noted (no examples were available for illustration).

GRANULATED WARE

A wheel-turned ware, generally buff-coloured but occasionally red, used primarily for large globular jars with slightly thickened or externally beaked rims (Fig. 22, 3, 5, 10). A form closely comparable to the Zari-ware jars with short vertical neck (No. 2) was common, the rim being sometimes swollen internally (No. 4) or with slightly beaded edge (No. 1). Less globular vessels were found, one sherd bearing a vertically pierced lug (No. 8). The only other shape noted was a shallow cordoned bowl (No. 9).

The distinctive feature of this ware is the deliberate roughening of the outer surface. In the majority of cases the granulation began on the shoulder of the jar, leaving a smooth surface immediately below the lip, though in a few instances granulation was carried right up to the lip. Two examples bore horizontal bands in black on the smooth surface, and in one case a black slip identical to the Anjira colour-coated ware was subsequently added.

It is not wholly clear how this roughening was caused. One explanation could be the application of sand to the dampened surface of the pot before firing. The technique probably had a practical purpose as in the case of modern Sindhi water-pots which are treated in a similar manner to keep their contents colder.

This ware was common in Anjira IV. It first appeared at Siah in Period II, phase ii, but did not become plentiful until the upper levels of phase iii.

Although no close analogies have been recorded from other parts of Baluchistan, McCown refers to sand-slipped pottery from Ahmed Shah and Amri¹. Its association with Amri-ware has been confirmed by recent excavations on that site. At Chanhudaro sand-slipped jars occurred in the

1. *Anc. India* 5, 30.

late Harappan and Jhukar levels, but usually the coating was grooved to form a rough pattern¹. These examples bear no resemblance to the Surab material.

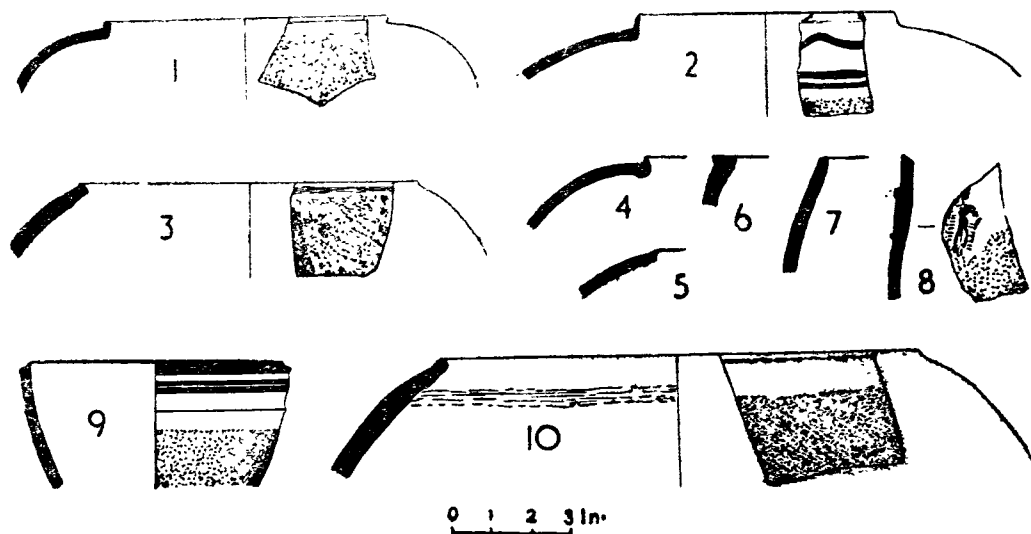


Fig. 22. Granulated ware

Fig. 22

1. (Pl. VI, A, 2) Medium-sized vertical-lip jar, rim diam. 18.6 cm., with granulation beginning 1.5 cm. below the edge (Sh. I, 2).

2. Part of a vertical lip storage-jar, diam. 17 cm., in hard but unevenly fired red ware. Bands of black/brown paint have been applied on a buff slip around the upper portion of the jar; the lower surface is granulated. The jar is comparable in form to Zari-ware (Fig. II, 2) (Aj. I 3).

3. Medium-sized storage-jar with nail-head rim, diam. 22.3 cm., in the same ware as No. 10 (Aj. I, 5).

4. Part of a vertical lip jar, the rim swollen internally. In buff-slipped ware. The granulations cover the whole of the outside of the upper part of the jar unlike other examples on which the roughened surface usually starts below the shoulder (Sh. I, 2).

5. Squared and slightly beaded rim of round-shouldered jar in buff ware with black grits. Granulation 4 cm. below the rim (Sh. I, 2).

6. Squared rim of globular jar in coarse grog-backed buff ware with cream slip. The granulation begins immediately below the rim and contains black grits (Aj. I, 3).

7. Squared rim of a jar in grog-backed red ware with greyish slip. Granulation 4 cm. below the rim; contains black grits (Aj. I, 3).

8. Part of a cylindrical jar with vertically pierced lug in buff ware. The lug is applied to the smooth surface just above the granulated area (Aj. III, 4).

1. Chanhudaro, pp. 86, 105.

9. Cordoned bowl with reeded rim, diam. 16.6 cm., in buff ware, with horizontal brown bands above the cordon and granulation 1.2 cm. below. In Pakistan (Aj. I, 1).

10. A large, round-shouldered storage jar, diam. 31 cm., with bluntly squared rim; close textured hard red ware, buff slipped. The granulation begins 2.5 cm. below the rim and incorporates white grits (Aj. I, 5).

OTHER FINDS

Relatively few animal figurines were recovered either from the surface or in the trenches of the Surab sites. At Anjira one small bull figurine (in Pakistan) and a horn were found on the surface, part of a small undecorated figurine (Pl. IX, b 3) came from Period IV and two small horns were found in Period II levels. More unusual were the two legs found in Period IV layers (Aj. I, 3 and III, 2). The latter (Pl. IX, b, 1), with cloven hoof, bore brown stripes down its length with triple horizontal bands on the outside.

Evidence of large figurines was also found in Siah II, phase iii, in the shape of a horn with broad brown bands (Pl. IX, b, 4), and part of an animal's head. A small fragmentary figurine was noted in phase i.

The presence of these large figurines in the upper levels of both sites is of considerable interest since the Rana Ghundai IIIc phase of Periano Ghundai provides the closest analogy¹. While the evidence of the figurines is slight, their occurrence in the same context as pottery with Zhob and Sadaat affinities may be significant. No human figurines were found on either site.

MISCELLANEOUS

Jewellery was scarce and comprised only two small flat bone beads in Anjira I and II, and Siah II, phase iii, and a couple of clay bangles in the earliest phase of Siah II, with a further example, of flattened ovoid section, in Anjira II.

Domestic implements included parts of a bone spatula and an awl in Anjira I and a similar spatula in Siah II, phase i. No metal objects were found but the presence of whetstones in periods III and IV suggests that such implements were in use. This theory is supported by the discovery in Anjira IV of an implement made from an Anjira-ware sherd (Pl. IX, a, 2) with one end sharply pointed, the other rounded and abraded, similar to *Nal*, Pl. XXI, 16, an object also shaped like a copper tool and made from a black-slipped sherd.

1. *M.A.S.I.*, 37, Pl. VIII, P.C. 1.

A spindle-whorl or toy wheel made from a basket-marked sherd was found in Siah II, phase ii. A stone socket for a door-post, a grooved pulley wheel and several saddle-querns were among the objects (unillustrated) lodged in Pakistan.

ANIMAL BONES

The bones of both sheep and cow were present in all periods of occupation on both sites. While deductions based on such limited excavations would be unwise, the evidence at Anjira confirmed the pastoral nature of the Kile Gul Mohammed economy first noted on the type-site.

POSTSCRIPT

Although erosion had removed all stratification subsequent to Anjira IV, surface sherds and pottery from the upper levels provided evidence of contact with - or more probably, the arrival of - a people best related in south-eastern Afghanistan to Mundigak IV, 1-3, a period which marked the end of the 'Quetta' occupation and the appearance of new ceramic styles. In northern Baluchistan these newcomers can be recognised in Damb Sadaat III, Rana Ghundai IIIC, and the Zhob Cult¹. Their presence in central Kalat was already attested by the small Rana Ghundai IIIC settlement at Nal² and my surveys had located similar surface material on a number of sites through Sarawan to the Surab valley and eastwards to Gandava. The western limits of this group within Baluchistan have yet to be delineated.

The material representing their culture on the Surab sites is varied and it is therefore illustrated in detail (Fig. 23). Dishes of Faiz Mohammad Grayware comparable to Nos. 2, 3, 6 and 7 were common in Sur Jangal III, Rana Ghundai IIIC and in Damb Sadaat II-III; at Mundigak two sherds were found in a Period IV, 1, context³. The ware has recently been recognised in the Intermediate Period at Amri when Sadaat influences were noted, and in the late pre-Harappan levels of Kot Diji⁴.

Some Sadaat-ware as distinguished in the upper levels of Cut 3 on the type site⁵ was found but a red-slipped ware with geometric patterns in black (Nos. 1, 4, 5, 11, 12) was more common. A comparable ware is known in Mundigak IV. No parallels can be cited for the combination of painted

1. *Zhob*, p. 363-4.

2. Stuart Piggott, *Prehistoric India*, Pelican Books (1950), 124-5.

3. *Mundigak*, Fig. 87, 354, 354A.

4. I am indebted to Dr. Fairervis for this information.

5. *Quetta*, pp. 362-71.

decoration and external combing of the kind shown on Nos. 1 and 9, though combing was among the decorative techniques used in Mundigak IV, 1. This red-slipped pottery may also be identified with Nurzai Black on Red Surface ware, which occurred at Deh Morasi Ghundai, with and after Quetta-ware, in Morasi II-III levels. The resemblance to the Surab material is strongest in the material from Morasi IIC.¹

Jars of circle-stamped Wet-ware (No. 26) were common in Damb Sadaat II-III. The distinction between the various Wet-wares rests largely upon the formality of the decoration and the use of painted linear patterns on the Periano variant². While linear ornament is absent from the Surab fragments (Nos. 19, 20), they appear closer stylistically to Periano than to Quetta Wet-ware since the body of one sherd (Pl. IX A, 3) shows traces of shallow grooving intended probably to control the slip and regularise the surface pattern³. The ware is known from Mundigak IV, 3⁴ and from the Zhob Cult and the subsequent Incinerary Pot phases of Periano Ghundai. The latter phase is described as post-Rana Ghundai IIIC but probably not so late as Rana Ghundai IV⁵.

Associated with the Wet-ware at Periano Ghundai was a Reserve Slip-ware⁶ characterised by fine straight and/or wavy combing of the kind shown on a Surab sherd (No. 17 and Pl. IX, A, 4). Both these wares are known from the early levels at Mohenjodaro⁷ and the latter occurred in the lower levels at Chanhudaro⁸. A few sherds of Cut-ware (No. 21 and 25) provided other possible links with the Harappa culture. The stepped and oval excisions differ, however, from the triangular openings on Harappan stands⁹ and are more closely comparable to stands from Tell Agrab and Tell Asmar¹⁰.

Fig. 23

1. Flat beaded base, diam. 7.5 cm., of small globular bowl. Red ware with black/grey slip and horizontal band of fine wavy combing externally; a geometric design in black on red inside. Cf. Nurzai Black on Red Surface ware, *Deh Morasi Ghundai*, Design 175 (Aj. I, 1).

1. *Deh Morasi Ghundai*, Designs 165 and 175.
2. *Zhob*, Fig. 52 and p. 382.
3. Similar herring-bone straitions were observed beneath the thick colour-coating on Anjira-ware, see Pl. VI, A5.
4. *Mundigak*, Fig. 98, No. 465.
5. *Zhob*, p. 333.
6. *Zhob*, Fig. 53, d, e, and p. 382.
7. E. Mackay, *Further Excavations at Mohenjodaro*, II (1937), Pl. LXCII, 1-4; I (1938), 184.
8. *Chanhudaro*, Pl. XXXVIII, 22, 26.
9. *Ibid.*, Pl. XXXVIII, 6, 7, 10, 11; *Mohenjodaro*, II, Pl. LXVII, 7-11.
10. Delougaz, *Pottery from the Diyala Region*, *Univ. Chicago Oriental Lit.*, LXIII, Pl. 68.

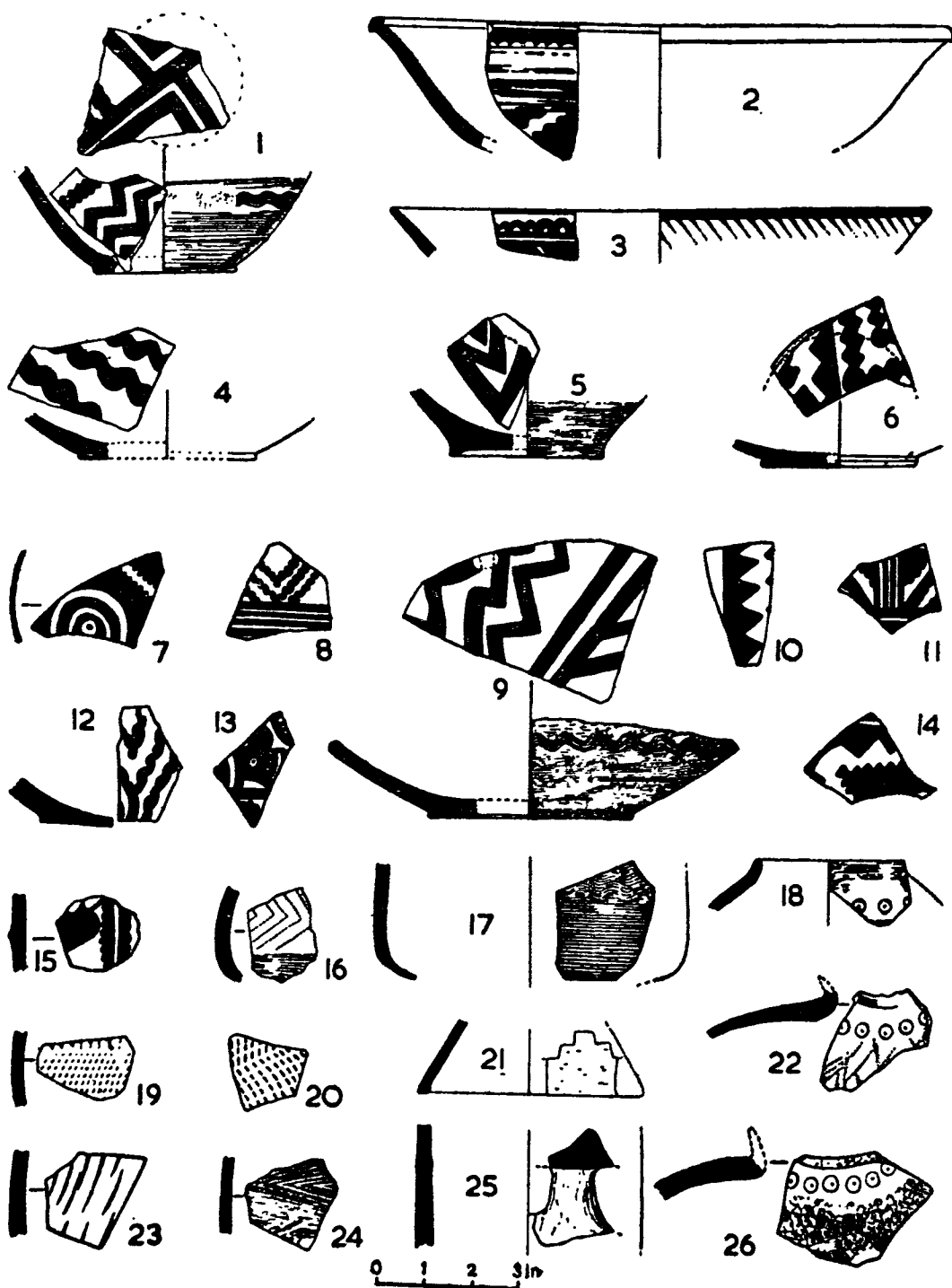


Fig. 23. Pottery from Anjira and Siah-damb related to wares in the Quetta region (½)

2. Shallow bowl with hammerhead rim, diam. 30.4 cm., and outsplayed curving wall. Dense grey ware with black geometric design, much worn, inside. Faiz Mohammad Grayware: the rim is unusual, cf. *Quetta*, Fig. 55, and *Zhob*, Fig. 74. (Aj. I. 2).

3. Rim, diam. 28.4 cm., of an open bowl or large platter. Smooth grey ware, diagonally trimmed on outer edge. The rim is edged with a black band and the design inside the bowl incorporates the looped motif common on Faiz Mohammad Grayware. Cf. *Quetta*, Fig. 55. (Aj. III, 1).
4. Flat beaded base, diam. 9.5 cm., of an open bowl, Hard red ware, self slipped inside and decorated with a bold geometric pattern (Siah surface).
5. Foot-ring base, diam. 8 cm., of a small open bowl Hard red ware, with black Anjira colour-coating externally; inside the design is black on a dark brown slip (Aj. surface).
6. Dish with concave ring base, diam. 8.2 cm., with marks of turning. Hard grey ware, apparently unslipped, a fact which may account for the slightly blurred outlines of the black design inside the dish (Aj. surface).
7. Part of a globular vessel in very thin grey ware. Design in purplish-brown. Cf. Mohammad Grayware from Sur Jangal *Zhob*, Design No. 468 and *Mundigak*, II, Fig. 87, 356, from Period IV, 1. (Aj. surface).
8. Neck of a flagon or cylindrical vessel. Red ware with opaque cream slip externally and design in brown/black. Sadaat-ware. Cf. *Mundigak*, II, Fig. 76, 258, which was of the same ware as No. 257, Period IV, 1. (Aj. surface).
9. Part of a platter with slightly beaded, concave base, diam. 11 cm. Hard red ware. A dark brown slip covers the horizontal band of fine wavy combing outside; black geometric pattern on red slip internally. (Aj. I, 3).
10. Sherd of hard grey/buff ware with grey slip and purplish-brown decoration inside (Aj. surface).
11. Neck of a flagon or small cylindrical vessel. Red ware with brown/grey slip externally and black design (Aj. surface).
12. Base of a thick-walled open bowl or platter. Red ware with brown slip externally; black design inside (Aj. surface).
13. Sherd of reddish buff ware with brown slip on which the black design barely shows. A narrow brown band was applied on top of a tan slip inside the vessel (Aj. III, 1).
14. Sherd with black on buff design. ? late Quett-ware style (Aj. surface).
15. Rondel cut from a cordoned pot, fired black. The design is carelessly painted, the thin black infill showing the outlines of the pattern painted on a brown slip. Possibly a waster due to faulty firing (Aj. I, 4).
16. Part of a small globular bowl. Hard red ware with zigzag incised punctures, triangular rather than round, due possibly to the angle at which the tool was held against the body of a bowl (Aj. I, 1). A similar sherd was found at Siah-damb (surface). Possibly similar to the pointile decoration noted on a Sadaat-ware jar by Mr. Leslie Alcock, *Quetta*, Fig. 66, q.
17. (Pl. VIA, 4). Part of a straight-sided bowl with thick walls thinning as they curve in to the base. Grey - buff ware, self-slipped and decorated with fine horizontal ribbing which

gives place to a band of wavy combed incising midway up the bowl. A similar ware is recorded from Periano Ghundai and Moghul Ghundai (*M.A.S.I.*, 37, Pl. VI P. 73; Pl. XI, MM.N. 48, MM.E. 1). Periano Reserve Slip ware (Aj. III, 1).

18. Narrow necked globular jar of dense buff ware with thick cream slip externally. Circle and dot incisions at the neck (Aj. III, 1).

19-20. (Pl. VI a, 3). Sherds of finely rusticated greenish buff ware, Periano Wet ware (Aj. III, 1). Cf. *Mundigak*, Fig. 98, 465, Period IV, 3.

21. Part of a conical stand with flattened slightly beaded base, diam. 6 cm. One of the few examples of Cut-ware. The stepped design is reminiscent of Quetta-ware painted decoration (Aj. I, 3).

22. Everted rim of a cream-slipped jar with dot and circle stamps set around the shoulder above a roughly geometric punctate pattern. Cf. a surface sherd from Nushki, *Quetta*, Pl. 30, y (Siah, II, 1).

23. Sherd of slightly gritty red ware with thick cream slip and diagonal slash marks recalling incised pottery of the 'Stone Axe' culture IA at Brahmigiri (*Anc. India*, 4, 1947-8, Pl. CVII, 15), and a Jhukar sherd (*Chanhudaro*, Pl. XLVIII, 1). (Aj. surface).

24. Sherd of smooth buff ware, with black slip externally. The fragment is much worn but appears to have been decorated with incised or impressed chevron pattern. Unique. (Aj. I, 4).

25. Part of a cylindrical stand with curving lozenges cut out below a band of black paint or colour-coating (Siah, II, 1).

26. Short-necked globular jar. Buff ware, cream slipped, with circle and dot stamps at the shoulder above Quetta dendritic rustication. A similar sherd occurred in Aj. I, 3. (Aj. surface).

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Sov. Ark.

Sovetskaya Arkheologiya.

Zhob

Walter A. Fairservis, Jr. Archaeological Surveys in the Zhob and Loralai districts, West Pakistan, *Anthrop. Pprs. Amer. Mus. Nat. Hist.*, 47 (1959).

INFLUENCE OF LIGHT ON MUSEUM OBJECTS

by

Chaudhury Rehmatullah, M.Sc.

It is necessary to understand what really light is, in order to get the idea how the matter will behave under its influence. Light treated energetically is made up of radiation of varying wave lengths and intensity. Light becomes richer in energy as the wave length is shortened. This energy is composed of certain units, called light quanta.

Light has a slow destructive action on a wide variety of museum objects, the most common being the fading of the dyes, the weakening of the textile fabrics and the discoloration and embrittlement of paper. Fading of dyes is a chemical change. Green copper resinate in paintings changes to brown. The museum director must know how the effect could be minimised then he can proceed with his design for display. Day light contains a proportion of ultra-violet light which is invisible and the most destructive kind of light. Therefore in the day light ultra-violet light should be eliminated by the use of filters. Fluorescent light also contains a small quantity of ultra-violet. Some ultra-violet light is cut off by glass windows. The range of the wave-length cut off is 3000-4000 Å. A rough proportion of ultra-violet light in some light sources is shown in the following table.

UV RADIATIONS

Day-light through 3 mm. window glass ranging from a clear blue sky, an overcast sky, to sunlight itself ..					25,10,5%
Fluorescent light	..	..	..	..	3-7%
Tungsten light	..	..	..	..	1%

But the removal of ultra-violet portion of light alone will not eliminate damage by light. The intensity of the visible light itself should be controlled. Maximum intensities allowed are shown in the following table.

Most museum objects, including oil and tempera painting.	Not more than 150 LUX (15 Lumens Sq. Ft).
Specially sensitive objects (water colour and tapestry).	Not more than 50 LUX (5 Lumens Sq. Ft).

All wave length shorter than 4860 Å can break a C-C bond and consequently be detrimental to many organic materials. This sort of decay in which light alone is the disintegrating medium is called PHOTOLYSIS.

Materials which are very sensitive to light cannot escape some harm even in dim light. It can be assumed that the damage is proportional to intensity of illumination and the time of exposure. Thus any device which reduces total exposure such as an individually operated light switch, a curtain's temporary withdrawal from exhibition is to be welcomed.

Certain chemicals have this property of being able to absorb almost all the ultra-violet light, but almost none of the visible light. Any of such chemicals can be added either to a varnish or to a transparent sheet of plastic to make an effective ultra-violet filter. Ordinary window glass absorbs only the shorter wavelengths of the ultra-violet. So far no ultra-violet absorbing glass has been developed as effective as these organic filters. Ultra-violet filters must be placed between the light source and the object illuminated. The complete protection is best ensured by placing the filters over windows, skylights and fluorescent tubes. Filters may also be used in exhibition cases and in picture frames, though special care should be taken that the slight yellow tint of a strong ultra-violet absorber is in no way objectionable.

Ultra-violet filters are available as transparent sheets or varnishes for glass coating. Varnish if well applied can be made almost invisible and is slightly cheaper. Care is needed to ensure an even coat of sufficient thickness to afford full protection. It would be useful if a sandwich like safety glass, or a plastic film plus absorber is kept between two glass plates.

A good ultra-violet absorber should have a sharp cutting at the limit of visible (4000Å.) with full absorption at shorter wavelength. It should be quite stable.

The convasses, particularly those with fibres containing a high lignin contents, rapidly lose their strength through photochemical effect of the brilliant and at times almost blinding light.

Museum lighting should never be excessive, a colour temperature of 4200 K or near-about will be found to be satisfactory in many cases. Philips 34 and Mazda Kolorite are the most appropriate sources of illumination.



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